

# ST APPLICATIONS

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The Magazine for Users of Atari ST, STE, Falcon and TT Computers

Issue No. 34, October 1993

## THIS MONTH

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- \* SpeedoGDOS
- \* SharpScore v3.0
- \* ImageCAT
- \* Falcon DocSupport
- \* NVDI v2.5

### Articles

- \* DTP on the Atari ST
- \* Beginners' Forum
- \* Using GFA Basic
- \* Drawing Outline Fonts

### Regulars

- \* News
- \* CAD Column
- \* Desktop Discussions
- \* Programmers' Forum
- \* Going On-Line
- \* Forum
- \* Grafix Arts
- \* PD Update v13.7

## SpeedoGDOS

At last, vector fonts are part of the Atari operating system! GDOS, the software patch to TOS for font management, is now superseded by SpeedoGDOS from the American company BitStream, with support for both scalable outline fonts and the bitmapped variety. Already a proven product on the PC market, will this be the turning point for Atari's future prospects? Or has it come too late? Review by Martin Norfolk.

## SharpScore

Formerly "Music DTP", SharpScore v3.0 is published and distributed by Take Control. It has better editing functions than the earlier incarnations and will run on the Falcon. Its price may put it out of the



reach of many ST users, but David Harvey is impressed by its sophisticated layout features.

## APPLICATIONS FALCON

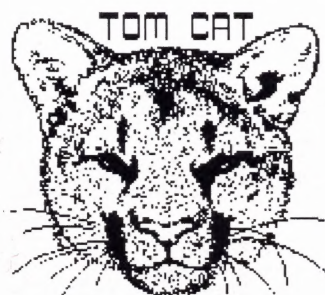
- ☐ Falcon News
- ☐ Falcon Forum
- ☐ Falcon PD and Shareware

### Plus:

*Falcon DocSupport:* Jon Ellis takes a look at the latest in Atari's series of technical documentation packages.

*NVDI v2.5:* Piper gives his impressions and benchmarks on the latest version of this software accelerator from Germany, now compatible with the Falcon and SpeedoGDOS.

## ImageCAT



If you have loads of clip art files spread around on innumerable (often unmarked) disks, and you spend half a lifetime looking for that rather fine corner decoration you last used some time last year, then perhaps you need a cataloguing utility. ImageCAT from WizWorks in America sorts out your art files automatically and prints up to fifteen pics per page. Reviewed by Michael Baxter.





**ST/ST-E/TT/FALCON O30**

All software packages require at least 1 Megabyte of RAM,  
Double Sided Disk Drive & Mono Monitor. A Hard Drive is  
recommended for using Calamus S, SL & Outline Art.

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Martin Norfolk	Piper

### Contributions

The articles in *ST Applications* are written by users for users. Everyone reading this magazine will have something to contribute; even if you do not feel able to do a full-length review or article there is the Forum section for short hints, tips and questions. If you are interested in writing for *ST Applications* - regularly or irregularly - please write for a copy of our terms and conditions. We always do our best to reward quality work with appropriate remuneration.

## Gribnif's Alternative To MINT

*Gribnif Software*, best known for NeoDesk, are to release a multi-tasking operating system for the ST, STE, TT and Falcon called *Geneva*. It is the result of almost two years' development and offers a number of advantages over Multi-TOS, the most noticeable of which are the smaller memory overhead (less than 125k) and the fact that your machine is not slowed down to the same extent as under Multi-TOS. They also claim higher compatibility with older programs, mainly through Geneva's ability to single-task those programs which contravene the rules for multi-tasking.

Single-tasking allows you to use programs which are not compatible with multi-tasking environments. The disadvantage is that all other GEM applications are suspended while the single-tasking program runs. In other words, it employs task-switching. However, this is better than under Multi-TOS where incompatible programs simply refuse to run. Unfortunately Geneva also single-tasks all TOS (i.e. non-GEM-based) programs unless you have MINT installed.

Geneva replaces the AES but not the VDI, so that screen accelerators such as Warp 9 and NVDI will work correctly with it.

You can load and unload accessories and run Multi-TOS applications without having Multi-TOS loaded. Geneva has 3D buttons, tear off menus and keyboard shortcuts built in. It does not require a Desktop since programs can be launched from its own task manager. However, a Desktop replacement is recommended since it is incompatible with the GEM Desktop supplied in ROM. Any Multi-TOS compatible Desktop replacement will suffice but Gribnif are offering a bundling deal with their own NeoDesk 4. Geneva is compatible with Multi-TOS although it can run without it. The MINT kernel is not needed unless you wish to multi-task TOS programs.

A configuration file specifies how each program should be run, so once set up, there's no more fiddling about. Also, a pretty comprehensive replacement file selector is built into the system. Geneva will be distributed in the UK by Compo Software. The package is to be offered bundled with NeoDesk 4 or as a stand alone product. It is expected that Geneva will be ready towards the end of this year and NeoDesk 4 will follow shortly afterwards.

## ATARI NEWS

Atari's forthcoming 64-bit games console was demonstrated to potential developers at a presentation in the Heathrow Penta Hotel last month. First impressions indicate that those who attended were impressed by the machine's capabilities. Some software was shown but it was said to have been in an early stage of development. Those who attended included US Gold, Ocean, Virgin, Audiogenic, Acclaim, Millenium, Core and Krisalis. The new machine is being targeted specifically at Sega and Nintendo in an attempt to break their stranglehold of the market. Although developers will be required to pay a licence fee in order to produce software for the Jaguar, the terms of the licence are expected to be much less restrictive than those for Sega and Nintendo. The machine has yet to be seen in public.

Despite rigorous efforts by Atari UK to promote the Lynx handheld console, the machine may be in for a premature death at the hands of the high street multiples. Locally I'm aware of Virgin, Dixons and John Lewis all discounting existing stocks to as low £40 per unit to clear. Accordingly, software is selling at silly prices starting

from £5 per cartridge. Naturally I assumed this to be a local problem. However, the same situation was reported by a friend on his return from holiday. A sales assistant at John Lewis' said that the Lynx had been discontinued although it's more than likely he meant that they had discontinued it, rather than Atari.

As you can see, there's not a lot to say about Atari this month, or at least not from this side of 'The Pond'. All the interesting news comes from The States. Here's a quick run down of what Atari themselves have been saying recently.

The contract with IBM to manufacture the Jaguar runs for 30 months. IBM will not be taking over the manufacture of the Falcon at present but this has not been ruled out as a possibility for the future. The TT has been brought back into production, despite having been discontinued in The States. The first shipments are expected as you read this. Finally, in a weird turn of events, Atari's Bob Brodie has denied that the STFM has been re-introduced despite the fact that we know it's on sale here. It looks like a case of dumping old stock on the market, if you ask me!



## Read Me 1st

Subscription Expired? If you received this copy of *ST Applications* through the post, check the first line of your address label carefully: if it reads **STA32**, then your subscription has expired with this issue; if the information line reads "Complimentary Copy" you have been sent a free evaluation copy of *ST Applications*. Either way you must take out a new subscription in order to receive further issues.

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## Advertising

There is a limited amount of space for commercial advertising in each issue of *ST Applications*. Contact Nicky Wilson on 0602-410241 for further details and to request a media-pack. Subscribers can place free classified advertisements - see page 57 for details.

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Canadian office: Tel: 519 539 0200; Fax: 519 539 9725.

Contact us for details of your nearest *ST Applications* stockist.

## Disk Mags

These are bi-monthly compilations of the best PD software to come to our attention in the preceding couple of months - not magazines on disk. The next Disk Mag, DMG.37, will be dispatched a few days after this issue is sent out.

## Jigsaw Released By Dolphin!

The first release from the Norwich based Dolphin Software Group is a program called Jigsaw. As the name suggests, the program allows you to solve Jigsaw puzzles on your Atari. It adopts the traditional approach of laying out all the pieces on the table. The 'table' scrolls to let you see all the pieces (owing to the limited resolution of the screen) and the display can be flipped to show your progress on the completed puzzle. The jigsaws are each supplied in three sizes and there are a total of 12 levels of difficulty. Jigsaw comes on

two disks and is supplied with three puzzles in each of the three sizes. A manual is supplied as is a catalogue of the other puzzles available. The program runs on any ST/STE, TT or Falcon in ST low resolution and costs £9.99. The Dolphin Software Group comprises three members, Rick Howard, Paul Margetson and Ken Ward. Contact the Dolphin Software Group, 5 Dolphin Grove, Norwich NR2 4DZ; Tel: 0603 617602. A demo of Jigsaw is available from the ST Club for the usual PD price.

## STraight FAX Upgraded Again

NewStar Technology Management have yet again upgraded their popular fax modem software, STraight FAX. The current version is 2.0 and fully supports both class 1 and class 2 fax modems. This allows the cheaper fax modems, which only support class 1, to be used. Multi-TOS users can have STraight FAX sitting idle, ready to pop up when needed, without quitting their current application.

Received faxes are saved directly to disk and can be printed to any GDOS supported printer. They can also be exported in IMG, PCX or EPS formats. You can incorporate text in ASCII, First Word/Plus and Word Writer formats as well as graphics in mono IMG, mono Degas, mono PCX and GEM metafile formats, into your own faxes. Images can be scanned with a hand scanner from within the software. The Navarone/Canon IX-12 series of flatbed scanners is supported via an optional driver at \$19.95.

STraight FAX can send faxes to up to 100 destinations and schedule transmission for a time and date of your choice. Caller ID/Remote FAX ID is used to reject incoming 'junk' faxes from a user defined list. The software also supports Supra's 'silent answer' feature which allows a single line to be used for both fax and voice calls.

Context sensitive on-line help is available at all times. STraight FAX has over sixty user definable parameters which can be set up and saved to your preference. The GEM clipboard is supported for the transferring of data between applications and some enhanced image editing tools have been added. A detailed fax send and receive log now records every conceivable detail about every fax sent and received by STraight FAX.

STraight FAX runs on anything from a 1 Meg ST to a Falcon or TT. Although it will run on a 1 Meg floppy based machine, at least 2 Meg and a hard drive are recommended for serious use. You'll also require a copy of GDOS, FontGDOS, FSMGDOS or SpeedoGDOS in order to print faxes.

STraight FAX costs \$109.95 but registered users can upgrade to v2.0 by returning their master disk and \$25 (\$20 if purchased after 1st June 1993). Customers from outside The States should add \$5.00 for postage. All payments should be in US dollars or by credit card. Contact Toad Computers, STraight FAX 2.0 Upgrade Offer, 570F Ritchie Highway, Severna Park, Maryland 21146, USA; Tel: 410 544 6943; Fax: 410 544 1329; BBS: 410 544 6999 (300-14,400 bps).

## New Moves Against Pirates

The European Leisure Software Publishers Association (ELSPA) and the Federation Against Software Theft (FAST) made a major breakthrough in their fight against software piracy last month. After experiencing one setback after another with local police and trading standards officers in some areas, they decided to adopt a different approach to the problem. The new course of action involves making sample purchases from the suspect and presenting these to

the police as evidence for a search warrant. Once this is obtained, the premises are raided and all software and hardware confiscated pending the outcome of a private prosecution. The first successful private prosecution resulted in a market trader being fined £555 including court costs. As a result of this, ELSPA and FAST are intending to follow through with about half a dozen similar cases per month from now on.



# News In Brief

## End Of The Line For DCS

Double Click Software, best known for countless Shareware utilities including DC Format, have ceased trading. As well as producing Shareware titles, they also had a number of commercial releases which included DC Squish, DC Data Diet, DC Shower and others. Since their operations closed down, they have re-released DC Xtract Plus (extracts files from different archive types) and DC SEA (creates self extracting archives) as Shareware. The

rights to their other titles are currently up for grabs although only DC Data Diet, a similar product to HiSoft's Datalite, has been sold to date.

## ST Action Axed?

Odd things are going on at Europress. ST Action, the last of Hugh Gollner's former ST publications in the Europress camp, has been transferred from one company to another within the Europress Group. It has switched from Europress Interactive to Europress Enterprise. The new editor is John Butters, who is also editor of Atari ST User. At least one more issue of the magazine will appear but its new editor is already on record as having said that it will probably be incorporated into ST User in the long term. What I can't understand is why they bothered transferring it from one company to another if they were going to axe it anyway?

## Chip Prices Set To Soar

A major fire which destroyed Sumitomo Chemical Company's resin manufacturing plant in Niihama, Japan is set to have a devastating effect on chip prices worldwide. The plant manufactured around 75% of the epoxy resin used to make the plastic packaging for semi-conductor components. Since semi-conductor component manufacturers currently use only the highest grade of resin, large scale shortages will be experienced in the short term, thus pushing up prices. In the long term, manufacturers are likely to change to other grades of resin and adapt their manufacturing processes accordingly.

## zzSoft On The Move

zzSoft, publishers of Easy Text Professional, have recently moved. Their new address is 114

Sparth Road, Clayton Le Moors, Lancs. BB5 5QD; Tel/Fax: 0254 386192.

## Future Opt For All Ticket Show

This year's *Future Entertainment Show* is set to be an all ticket event. This is in response to reports of overcrowding at last year's event. Those booking tickets for the Friday will receive a special preview cinema ticket for Disney's Aladdin. The all ticket decision has been taken in an effort to spread the crowd more evenly over the four day event. The *Future Entertainment Show* runs from the 11th-14th November at Olympia, London.

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## ST Club Clinch Omikron Deal

The **ST Club** have recently acquired the UK rights to ST and Falcon software developed and published in Germany by **Omikron**. The first product will be a re-release of **Mortimer**, previously distributed by Kuma Computers. Mortimer is a memory-resident multi-function utility similar in some ways to **Harlekin**. It can be called up from within any application with a simple key combination. It includes a text editor, printer spooler, keyboard macros, virus guard, flexible ramdisk, screen grabber, disk utilities and a pop-up calculator. This version of Mortimer will not run on the TT or Falcon. It will be available as you read this, at a cost of £14.95.

**Mortimer Deluxe** has countless extra features over the original. These include ten text editors, a file search facility, a file copier, an improved file selector, a time scheduler complete with alarm and alarm text, the ability to search for text within files and, finally, file encryption. Mortimer Deluxe is fully compatible with all models of the ST, STE, TT and Falcon. No price or release date has been set as we go to press.

**FreeWay** uses a revolutionary new concept in database design. It combines the flexibility of a free form text database (as used in card index type programs) with the traditional field structures employed by traditional databases. FreeWay is fast and easy to use, yet powerful enough for professional use via its own built-in programming

language. FreeWay will be available in October and has a provisional price tag of around £120.

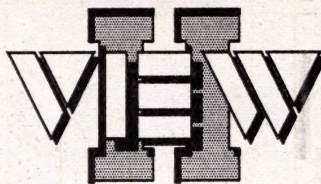
**PixArt** is a feature-packed True Colour graphics package. It runs in any resolution on the ST, STE, TT or Falcon and takes advantage of the increased resolutions of the Falcon. PixArt is fully compatible with all GEM compatible graphic cards and supports digitisers and graphic tablets. One of its strong points is its ability to use all drawing tools within zoom mode. Another is its creative block manipulation facilities. PixArt has been favourably reviewed in the German computer press and will be available in September for £34.95. The ST Club are also offering a bundling deal with PixArt and Imagecopy 2 (known as **PixArt IC**) for £49.95. This will allow PixArt to output to colour dot matrix printers. A text styler is also available bundled with PixArt (known as **PixArt T**). This allows PixArt to import Calamus fonts in a variety of styles and colours and will be available in October at around £49.95.

The **Omikron Basic** range of programming languages and libraries will also be available. However, they will only be supplied in German initially with a decision on the viability of translating them being taken later in the year. For more details on any of the above contact **The ST Club**, 2 Broadway, Nottingham NG1 1PS; Tel: 0602 410241; Fax: 0602 241515.

## ST Prices Tumble At SDL

SDL, the trade distribution arm of Silica Shop, have slashed the price of the 1040 STE to just £199! Also available is their own 1040 STE Music Master pack which includes Steinberg's Pro 24, at the same price. They are offering an STE upgraded to 4 Megabytes for just £299, the old 1040 STE price point. The re-introduced 520 STFM remains at £159 and the 520 STE Discovery Xtra pack is upgraded to one megabyte and bundled with Steinberg Pro 24 for £199.99. I must stress that

these are not official Atari prices, merely those of SDL. Rumour has it that Atari are to cut the official prices across the ST/E range in the near future. It is currently unclear why SDL have made such a brave move as to cut £100 off the price of the 1040 STE without waiting for an official reduction by Atari. My personal feeling is that SDL are to drop the ST range and are currently reducing all stocks to clear. But then again, I could be wrong!



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# SpeedoGDOS

It's here, you can actually buy it,  
and it works!

## The Arrival

**Martin Norfolk is delighted at the long-last advent of Atari's new font management patch for TOS.**

### Vapour-ware

The PC world is rife with software houses promising an imminent release of their new, fantastic and stable product which will succeed all others, and as a marketing ploy it is an effective strategy. Buyers will usually hold off from buying a currently-available title for the promise of a more feature-laden and bug-free product to be released 'rsn' (real soon now)! And there's the hook: when is 'soon'? Since developing software is more akin to artistic creation than scientific manufacturing, there are inevitable delays as bugs are fixed and designs are amended. Within reasonable time limits, a customer may postpone his/her purchase until the promised product reaches the market, but vapour-ware will eventually create a negative effect if the delay is excessive.

So where is the limit to how long a product can be hyped without appearing on the shelf? For ST users, the wait for the bitmap font handling of GDOS to be upgraded to the vector font scaling of Speedo has been too long. This delay has caused several software houses to develop their own proprietary vector font formats and font handling routines. And inevitably, they're all different, so that each program has its own unique font format which cannot be used with other programs. Libraries of fonts can be very expensive to amass, as any owner of a professional Adobe Postscript collection will tell you, and users will not be inclined to build duplicate collections of vector fonts for each program on their hard disk.

Enter the new Falcon 030 computer. This promising

machine, aching with potential, desperately needed an upgraded operating system (OS) complete with effective vector font handling. The OS on the Falcon is TOS version 4 and SpeedoGDOS is its vector font handling OS extension, and this is where most ST owners benefit because Speedo is compatible with TOS back to version 1.02 (although 1.04 or later is recommended).

### History

When TOS was first embedded into a (ROM) chip in the early ST's, Atari decided not to include the part of the operating system which would handle graphics and fonts. This was the Graphic Device Operating System (GDOS) and it would be made available on disk under licence, and only for programs which needed it. But it was a pig to set up, slow to use, its bitmap fonts consumed huge amounts of RAM and disk space, and its printed output was OK but nothing to write home with! Not a recipe for an instant million seller.

The success of the original Apple Macintosh had much to do with its WYSIWYG display (as a feature of its GUI - graphical user interface). It could display on screen, and print to any type of Apple printer, PostScript vector fonts newly developed by Adobe (which did not require bitmap files for each font size and resolution). The Adobe Type Manager (ATM) became the OS's font handling module, and upon these features was built a legion of graphics programs and, subsequently, a whole industry. Ten years on, it is reasonable to expect any new micro computer to be able to display and print vector fonts, and the Falcon and ST are now belatedly capable of this with the arrival of Speedo.

### Bitstream Inc

The code and name of Speedo are licenced from Bitstream - an American company who developed a vector font format and font manager to compete with Adobe's PostScript fonts and ATM. PostScript fonts and Speedo fonts have different file formats and are not directly interchangeable, although the quality of each is equally professional. The other font file format to emerge onto the world stage recently is that of TrueType from the all-powerful Microsoft Corp. But in choosing to tie-in with Bitstream, Atari have chosen an established and reliable technology which will not go the way of FSMGDOS. Speedo is already a proven product in the PC market, more compact and faster than its PostScript counterpart, and these features will be important to Atari users with modest RAM, disk space and processor speed. All in all, this is a significant step in bringing Atari into the mainstream of personal computing developments.

### The Product

SpeedoGDOS, published and distributed in the UK by Hisoft, consists of 3 floppies in a disk wallet and an excellent 48-page manual. Disk 1 contains the Speedo program itself, two desk accessories, example configuration files (ASSIGN.SYS and EXTEND.SYS), device drivers, and an installation program. Disk 2 contains 12 printer drivers and Speedo fonts files, and disk 3 contains the remaining font files.

The 14 vector fonts supplied with Speedo include the two essential typefaces of Swiss and Dutch (equivalent to Helvetica and Times) in four weights - nor-

mal, bold, italic, and bold italic. The other fonts are Cooper Black (a heavy, rounded-serif face), Monospace (like the standard typewriter face - Courier), Wingbats (icons and symbols), Park Avenue (a fancy script), Symbol Monospaced (script-like Greek equivalents of English characters), and VAG Rounded (the heavy, sans serif face used by the Volkswagen Audi Group - hence the name).

### Installation

The installation program is easily understood, flexible and painless. To install onto a hard disk the beginner needs to know nothing except how to double-click on INSTALL.PRG. Each stage is explained in the manual should the simple dialogue boxes give insufficient information to the enquiring mind. Every installation program should be like this!

When INSTALL sets a path or creates folder, the dialogue box is fully editable, so that a customised installation can be designed to fit in with a personal hard disk hierarchy. Installing onto floppies does not require the install program, just the copying of the appropriate files to the appropriate disks. The manual makes each step clear. However, it should be said that any user without a hard disk, wanting good performance from any WYSIWYG program using vector fonts, is asking a lot of the hardware. Get a hard disk - life's too short!

Having copied the Speedo program into the AUTO folder, and the SPD fonts into your preferred directory, the installation program then creates a new file called ASSIGN.SYS (or edits an existing one). This file resides in the root directory of the boot



drive (normally C:\) and its purpose is to tell Speedo where to find which drivers when the computer is booted up. Finally, a printer driver is installed from a selection of 12 options. The drivers cover most of the popular printers and emulation standards from Hewlett Packard, Canon, Epson, Star, NEC and Atari. If there isn't one suitable, you've got a pretty unusual printer!

### Desk Accessories

After installation, changes to the configuration are handled by the two desk accessories supplied, which can also be renamed to run as programs from the desktop. DRIVER.ACC/PRG will select a printer driver and need only be installed if the original driver chosen during installation needs to be changed. As an accessory, DRIVER will be invaluable to those with a multi-printer setup needing to switch between printers mid-session. The other accessory OUTLINE.ACC/PRG is used to select or deselect fonts, to set cache sizes and paths, and to build width tables if required. Configuration data from this accessory is stored in another root directory file called EXTEND.SYS and, like ASSIGN.SYS (which is created by the installation program), the uninitiated need never know about it or touch it. Bliss. OUTLINE should be loaded every time you want to use Speedo.

These accessories are great improvements on those supplied with the ill-fated FSMGDOS, and are light years away from the original GDOS planet, where no Starship or utilities ever went – boldly or not! The ease with which Speedo can now be installed and used is going to be a key to its success.

### Libraries

With the arrival of Speedo and with the availability of quality Bitstream fonts, those tacky bitmap fonts can be sent to that PD resting home in the sky. Then, OUTLINE can be used to set the bitmap cache to zero (and thus free more memory), and all good Atari-philes can start to use and amass libraries of gorgeous, properly kerned, professionally designed and balanced, hinted and highlighted, quality Speedo fonts for all those programs which use them.

In addition to the 14 fonts which are supplied with Speedo, Hisoft are also marketing two collections of fonts: the Writer's Pack and the Designer's Pack.

## Third-Party Support

*That's Write v2* and *Write On* currently use a combination of bitmap and resident printer fonts, but Compo have exciting plans for version 3 to use PostScript type 1 fonts and Speedo fonts in various combinations for video and printer output. *That's Write* is becoming a fantastic mix of power WP features, speed of use and printing, and high quality output. Compo certainly are positive about the benefits of Speedo fonts.

*Calligrapher v3* uses its own LAC vector fonts, and Working Title say that future releases will definitely not support Speedo but might use PostScript type 1's. That is a shame because Calligrapher's slow screen redraws might benefit from the quicker Speedo routines.

*WordFlair 2* is up and running already with full Speedo implementation. Rather than ask what WordFlair will do for Speedo, it is the case that Speedo has transformed WordFlair 2 into an attractive solution for entry-level WP and document processing needs. It offers an unusual combination of features, but its good WYSIWYG display is quicker and more stable, and Speedo's printed output is excellent. This was the only program I had for this review with which I could test all the features of SpeedoGDOS, including its font scaling.

*Timeworks Publisher 2* is the big question mark. It currently uses GDOS and will, therefore, have immediate access to most Speedo features. Timeworks Publisher 3 has just been released for the PC and it uses Windows and TrueType fonts. If GST invest in any further development for the Atari platform at all (ST and Falcon), it would only be a small step to fully support SpeedoGDOS.

On the broader DTP front, *Calamus*, *Didot* and *PageStream* each have their own vector font formats as well as supporting PostScript type 1 fonts. We can only hope that, if these titles survive the current economic climate, then support for Speedo fonts will be added. These advanced programs have their own font handling routines, so they wouldn't have any need for SpeedoGDOS itself, but developing a program to use Speedo fonts directly doesn't require any support or encouragement from Atari. So there is hope!

Since text-based WP's such as *FirstWord+*, *Protext* and *Redacteur* only use the system font and have no WYSIWYG or multi-font capability, it will be interesting to see how they are further developed for the Falcon. Screen displays will always be quicker for using the system font rather than a bitmap or vector font, and certainly Redacteur's blistering speed couldn't be reproduced with a WYSIWYG display. But *Write On* has shown that the display/print speed of multiple fonts can still be healthy, and certainly a match for FW+ in the budget WP market. Redacteur will not change its spots – it is a dedicated, word-crunching, speed demon – but the world is changing, and even the world's most popular word processor, *WordPerfect* for DOS, now has a WYSIWYG mode and supports Speedo fonts!

Each pack contains 25 pro Bitstream fonts are cost £59.95. This is excellent value when compared with Adobe Postscript fonts which can cost about £100 for a typeface family in four weights. Don't compare pro fonts with home-made PD designs which cost next to nothing – there is a world of difference, which the careful eye will notice. (See recent issues of STA in which Günter Minnerup and Graham McMaster have begun to explore the science and aesthetics of typeface design, especially STA issue 30.)

The whole point of having font-handling built into the operating system is to ensure that most programs use it. Then we only need one font library for WP, drawing, DTP, and 'spreadsheet-ing' (?) – instead of having a library for each and quickly filling up precious hard disk space. The effect of Atari's failure to produce Speedo before now has been that several leading ST applications programs have developed their own proprietary, font-handling systems and their own font formats. Some handle their own

fonts directly without the need for any other software and some use standard GDOS bitmap fonts (or similar) without using GDOS at all.

At the moment I have four collections of fonts, each in a different format, for different programs, and I'm loath to build any of them into a library because of their exclusivity. Now if most of these programs adopt Speedo, it will be considered a success – and great chunks of my hard disk will be freed!

### Job Description

So just what does SpeedoGDOS actually do for a living? This may not be obvious because it doesn't interface directly with the end-user except through its desk accessories. Well, at boot-up time, it is loaded from the AUTO folder into memory, and it provides a service to any application program designed to use it. An application program, in this case, would be a program such as a word processor or a desktop publisher which chooses to use SpeedoGDOS to handle both the video display and the printing of fonts. Speedo converts the selected vector fonts into a full character set of letter images at the chosen point size (character height) and at the appropriate resolution (screen resolution is different from printer resolution). So, regardless of size, there is no loss of quality.

SpeedoGDOS's big advantage over the original GDOS is that vector fonts are re-drawn at whichever point size is requested, with no loss of quality as size increases. In the event that the application program using SpeedoGDOS can't access the font scaling mechanism (fsm) itself – i.e. determine the actual point size it requires – then OUTLINE can offer a variable collection of pre-set point sizes.

### Compatibility

Speedo can handle old GDOS bitmap fonts as well as vector fonts, and for many programs it should directly replace GDOS without problems – offering access to bitmap and vector fonts simultaneously. Should a program not be able to use Speedo's font scaling feature directly (i.e. its ability to scale fonts for display or printing at any point size) then it should be able to use the default point sizes set by the OUTLINE accessory. OUTLINE can also create width tables for each active font should your program require them.

Timeworks Publisher is perhaps the most popular program



which may benefit from Speedo, though at present it cannot directly use the font scaling feature. At the moment, WordFlair 2 is the only program in the UK that I am aware of which can directly use the font scaling module, but any newly developed package for Atari machines is sure to utilise Speedo from the outset. For existing programs, HiSoft promise that Speedo will be able to replace the old GDOS without causing any problems and I assume that includes spreadsheets such as K-Spread as well as WP and DTP programs.

Because it is a memory-resident program, it can clash with other memory-resident programs. It won't work, for example, with Quick ST3, although it is compatible with the popular German accelerator NVDI. Speedo worked happily alongside the following memory resident programs I use: Pinhead, Fpprint, UIS, Harlekin 2, Idle, Imagecopy 2. There are only likely to be problems with other programs which play with the VDI (the part of the operating system which handles the screen display, and which programmers must understand and address in their coding). No tests were made with replacement desktops.

### The Big Finish

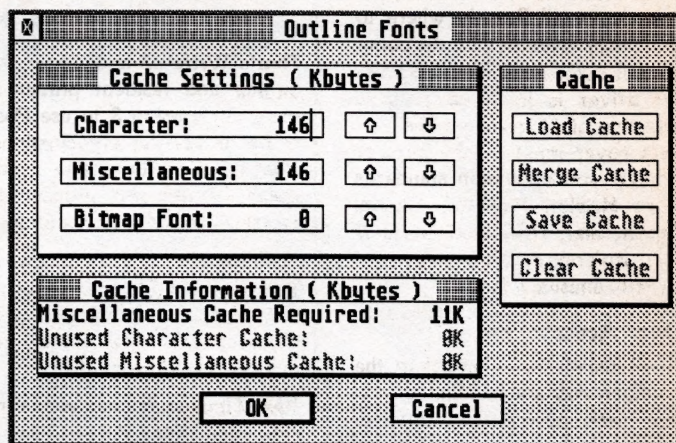
Despite having enthusiastically spent great swathes of my life using my ST and dozens of different programs, I have always

strongly avoided any program which required the old GDOS. Even with a professional DOS background on PC's, I didn't see why I should have to suffer the endless tinkering with ASSIGN.SYS files without any serious support or guidance.

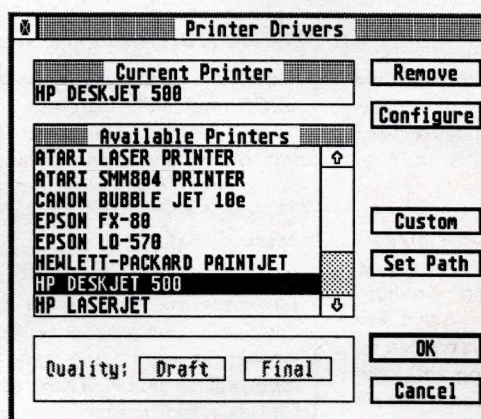
But now I would have no hesitation in using a program which needed SpeedoGDOS - it's stable and it's quick. It has been easy and even fun to use. So if you have any program which uses the old GDOS, I would have no hesitation in recommending upgrading to Speedo immediately, without waiting for your program to be upgraded to use all of Speedo's features. You can still use your old bitmap fonts along with the standard set of vector fonts that come with it.

Minimum requirements for use are TOS 1.02 or higher, 1Mb of memory and a single double-sided floppy drive, but I would recommend no less than TOS 1.04 and a second floppy drive. As an aside, I have never regretted upgrading my memory to 4Mb and purchasing a hard drive and, despite the expense (which is ever decreasing), these are specifications which really do transform your use of powerful applications programs and system utilities like SpeedoGDOS.

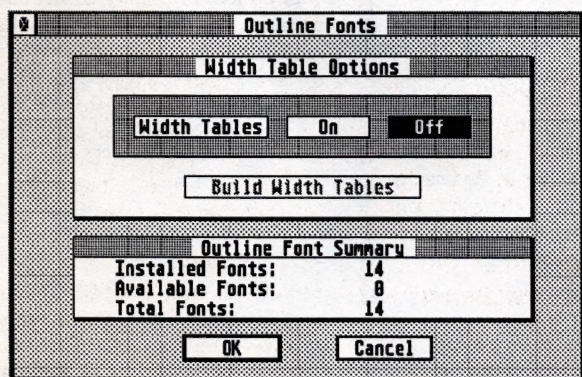
Mission completed. Let's go home Mr Zulu, warp factor 2. We now have the software to go into the future with confidence. (Sounds like a deodorant ad!)



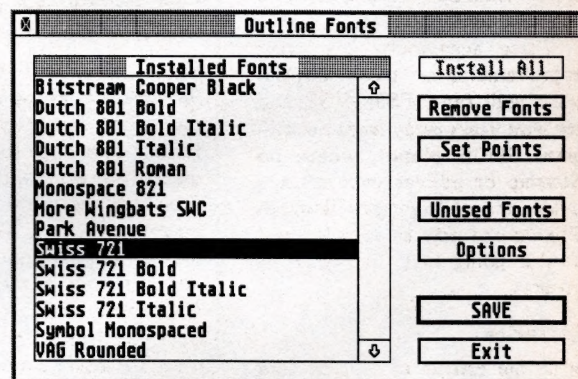
△ Speedo actively loads and unloads fonts into its cache memory as they are needed. Cache sizes can be altered to find the optimum size for your memory. So there is no immediate limit to the number of fonts you can use in one document.



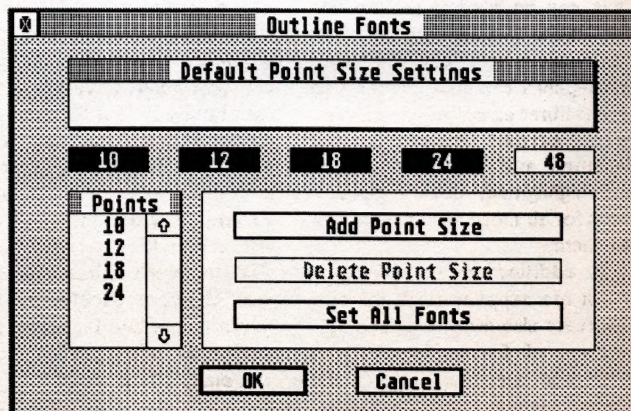
◁ Using the DRIVER accessory, printer selection requires a simple point-and-click! Print quality and page size can be set under Options, and Custom offers scary possibilities.



◁ For programs which need width tables for old GDOS or FSMGDOS fonts, OUTLINE can construct them, use them, or ignore them!



△ The main screen of OUTLINE enables fonts to be selected or de-selected. Compare this with the old GDOS method of editing ASSIGN.SYS files!



▷ For programs which can't directly scale the vector fonts to a chosen size, OUTLINE can offer a range of changeable preset point sizes.

Product:.....SpeedoGDOS  
 UK Publisher:.....HiSoft  
                     The Old School, Greenfield  
                     Bedford, MK45 5DE  
 Telephone:.....0525 - 718181  
 Price:.....£39.95 inc VAT  
 Manifest:.....3 DS/DD floppy disks in wallet;  
                     well-produced, 48-page manual  
 System: Recommended spec:  
                     TOS 1.04, 2 floppies or hard disk,  
                     1Mb RAM or more.



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ADDRESS File Print Data-Entry Sort Options Key-Define	
ADDRESS V1.5 DEMO PRINT LABEL Search Repeat DOUBLE CLICK/ROLL << >>	Name: Peter Allways Street: The Old Forge, Callmill Street District: Town: Snykesmill County: Leicestershire Country: Post Code: LE45 6YY Telephone: (0111) 66765 Connection: Keep Fit
Information Box    File Loaded: A:\TEST.DAT	
Program Status Normal Operation Mode	Max addresses storable: 20 Tot addresses in file: 7 Currently displaying num: 6

### Features:

- Store as many addresses in the file as your disk/memory will allow and have as many different files as you wish.
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- Auto load an address file when the program is loaded.
- Print out addresses onto envelopes.
- Print out on labels - 1, 2, or 3 across the web. Label layout is fully configurable. You choose which addresses to print by using the Search feature.
- Produce a telephone list.
- Dial telephone numbers with a modem.
- Keyboard short cuts for most menu options, making the program a breeze to use.
- With the accessory you can call up an address whilst in any other GEM application (eg. to print out addresses or telephone someone).
- In the accessory you can use the in built timer to time a telephone call and keep a running total of call charges.
- In the accessory you have the printer macro buttons - 12 programmable buttons you can define to select different features on your printer. You are not limited to just Epson printers.
- 'Flying Default' feature in the accessory means that the Return key changes its use according to what is the most likely next choice.

# 100

## Typefaces for Calamus™ 1.09n, S & SL

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# SHARPScore 3.0

*Professional music notation for the Atari ST and Falcon, reviewed by David Harvey.*

**S**harpscore 3.0 is the latest incarnation of the music notation program Music DTP, produced and distributed by Take Control. The new name reflects several notable improvements over the previous version (Music DTP 2.2), particularly in the editing functions implemented, automatic extraction of parts, and support for the Falcon. What is more, a number of automatic alignment options have been added, and while the speed of screen update makes these less useful on a humble ST, if you are fortunate enough to have a Falcon then these will help to reduce significantly the amount of time taken to input and edit scores.

## Overview

For those unfamiliar with the earlier Music DTP program, a brief description. Sharpscore is a GEM-based score editing and printing program, giving access to a comprehensive set of musical notation symbols. In addition to mouse/keyboard driven input, the program can also import and export standard MIDI files (comprehensive options for both may be set: as I don't have a MIDI setup - yet! - I won't mention this aspect of the program again), and MIDI may be used for both real-time and step-time input of scores. Page size may be chosen from a predefined list (A5 to A3, portrait or landscape format), or set explicitly by providing dimensions. Page setup is easy: staves may be grouped into systems, clefs and key signatures added, and a layout saved as a template for use in a given score or more generally. Scores may be played using the internal monitor speaker (via the sound chip or using samples), or again through a MIDI instrument (although this is not a primary function of the program, and options are restricted when compared with a sequencer or similar program).

System requirements are generous: an Atari ST, TT or Falcon, colour or monochrome monitor, at least 1MB memory and at least one double sided disk drive. For serious use on a standard ST a monochrome monitor is almost essential, 2MB plus is handy (for GDOS font buffers if nothing else), and a hard

disk makes life easier whatever else you have.

## Out of the box...

Sharpscore is supplied on six double-sided disks, of which the first contains the program and some example files, the rest containing fonts and drivers for a variety of printers. Documentation takes the form of an A4 ring-bound manual stretching to some 130 pages: this is well organised, with an introduction, installation instructions, a reference section, a tutorial guide which takes you step-by-step through the creation of increasingly complex scores, followed by appendices (print-outs of the examples used in the tutorial) and - importantly - a comprehensive index. The text is copiously illustrated with screen-shots of menus, dialogs, toolboxes, and work in progress.

It is worth working through the first couple of tutorial sessions, as they cover the all-important aspects of defining a page layout for a score: not only a matter of choosing page size, but also setting up the number of staves on the page, and defining their grouping into systems. The reference section is clearly laid out, following the structure of the program's interface in its descriptions of the tools which may be selected from the toolbox panels, and the options available from the dropdown menu.

## Installation

A setup program is provided which makes the business of getting the program onto a hard disk or a working floppy extremely simple. As always, you are recommended to make a working copy of the distribution disks (the program is not copy-protected). On running the installation program from the working disk you are presented with a dialog box on which you select a printer, and identify the destination of the installation process (single or double floppy disk installation, boot or non-boot hard drive partition). The option to load a reduced font set is provided for installation to floppy disk. If you are installing to a hard disk, you are then prompted for the pathname of a folder which will serve as the root of the in-



△ Work in progress in the full Sharpscore desktop.

Selecting a symbol from the control box in the top left activates a toolbox, from which symbols and editing functions are chosen. Many symbols are available in pairs: clicking on the right mouse button switches to the alternative symbol.

stallation, and at this point you are also given the option of installing GDOS. The version of GDOS supplied with Sharpscore is FontGDOS: the setup process creates all the required configuration files in the correct places (renaming an existing ASSIGN.SYS file to ASSIGN.OLD), although if you are installing to a non-boot hard disk partition the GDOS files will be written to the floppy disk from which the fonts and driver for your selected printer were read.

Having selected installation options, accepting the final dialog starts the process. You are prompted for disks as they are required: if you realise you have made an error you may pause or abort the installation by pressing the Escape key. Finally, the program asks you to reset the computer to complete the installation (which is a little harsh if you have elected not to install GDOS!).

On a hard disk, setup creates system, font, template, temporary and other folders as children of the base Sharpscore folder. These are then referenced by the ASSIGN.SYS file created for the GDOS installation and a configuration file, MUSIC.CNF, which identifies program, font and temporary folders for the program's use at runtime. While this simplifies installation considerably for most users, some may want to install into an existing GDOS setup, or use a RAM disk for temporary files. The MUSIC.CNF file is a simple text file, which may be edited to identify your base GDOS folder and a temporary folder on a RAM disk. This leaves

you with the job of transferring the font files and merging the ASSIGN.SYS file created during installation with your existing one. Use of a RAM disk to store temporary files is discouraged by the developers of the program: Sharpscore will allocate as much memory as it can for internal buffers to store pages of scores, and it works more efficiently with more of these than it does even writing pages out to a RAM disk. None of this is currently documented in the package, an omission which is due to be corrected: reference material should include descriptions of 'expert' as well as 'novice' matters.

## Setting up a page

On selecting "New File" from the Edit menu, you are given the opportunity to select a template page layout (a number of standard layouts are provided, and it is simple to add to these). If you choose to use a template, it is loaded and you are then ready to start what the manual rather grandly calls 'the engraving process'. If not, you have to define a page layout yourself. This involves selecting page size, orientation (landscape or portrait), staff size (large or small staves are provided) and number of staves per page from a page layout dialog, following which the program presents you with - effectively - a blank page of music paper. At this stage, it is a good idea to adjust staff spacing. For example, if you are notating a piano piece, the space between the staves of a single system should be somewhat less than the space separating systems. Selecting



the staff name/spacing tool in the edit toolbox, then clicking between the staves, displays a dialog box in which spacing can be increased or decreased.

The next step involves grouping staves into systems. In our piano example, assuming a layout with ten staves per page, each system will have two staves, giving five systems on the page. The first system is defined through a dialog box (you enter the first and last staff numbers for the system): in most cases you would also then define one or more instrumental blocks for the system (this gives the square or curved bracketing symbol which joins staves). Finally, the system you have designed can be copied to the rest of the page in a single operation.

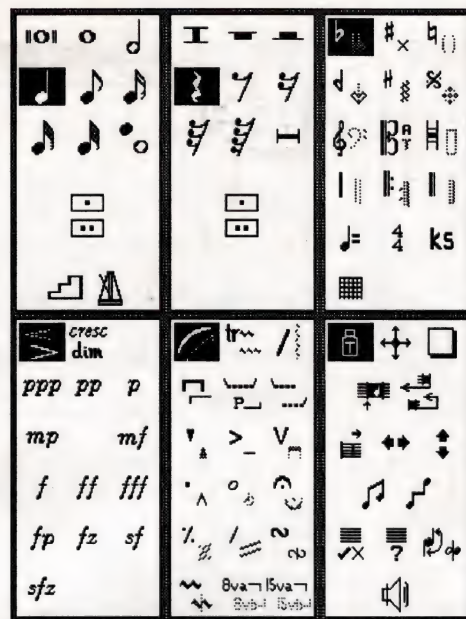
Clefs are then added: automatic alignment options are set by default so that all clefs appear at the left of a staff, and clefs are forced to the appropriate position (the treble clef centred on the second staff line, for example). These can be disabled from the Options menu, making it possible to place any clef at any position on a staff. Another important feature to place on a page template is a key signature: the most reliable way of doing this is to create the signature on the first staff using the key signature tool, then use the 'block copy' function to transfer this to the other staves. If the Align on Copy option is selected in the Edit menu, each copy will be aligned vertically with the original key signature, ensuring regular spacing.

Once this is done, the template is complete and should be saved for use in building the rest of the score. Often the first page of a score will look somewhat different from the rest: there may be fewer systems on the page (to allow for a title) and the first system may well have the instrumental parts named. For this reason it is a good idea to set up a template for the 'standard' page layout in your score, and then work from this to produce any special characteristics you need on the first page.

## SharpScore in use

Unless you have access to MIDI, input is largely mouse driven. All editing options, symbol selections and so on are available from menus and the toolbox panels: the most important can also be accessed through keyboard short-cuts. After a while, you settle down to ambidextrous use, with the right hand driving the mouse, the left hand ranging over the keyboard. The numeric keypad, which selects (amongst other things) different rhythmic values for notes and rests, is particularly important.

While it is possible to use SharpScore in the way one would usually write out music, the layout of the editing tools and options makes it more efficient to work on a staff in a number of 'passes': rather than add everything as



◁ Six of SharpScore's nine toolboxes.

From top left, clockwise: Notes, Rests, Accidentals (with barlines, clefs, key signatures), Editing tools, Articulation, Dynamics. In addition, toolboxes are supplied for mediaeval notation symbols, text, and free graphics.

you work your way through a score, it is quicker to add notes/rests/barlines, then to group notes, then add articulation, dynamics and so on. A professional copyist would find nothing strange about this - it is also the easiest way to work with transparencies and India ink. Assuming automatic spacing options are turned off, a reasonable sequence of events for input of notation is as follows:

1) Work a system at a time. For each, select a 'master' part (the one with the most notes is usually advisable). Select the note input tool, then using the numeric keypad to switch between duration values and the right mouse button to toggle the direction of the note tail between up and down, add the notes of the part. Ledger lines are drawn dynamically as you move the mouse above and below a staff: this is a nice touch, and means you never have to guess where a note is going to appear. The keypad also toggles between notes and rests, and has shortcuts for barlines, sharps, flats and naturals: this first pass should place all the basic pitch and rhythmic information (extending even to grace notes, accessed again through keyboard short-cuts).

2) Switch on the note-guide option. This draws a vertical line through the centre of each symbol placed, and makes it easy to align notes in subsequent staves of a system with those already entered. There is also an Align Notes option, which snaps notes to the alignment lines if they are placed close to one: this can save some effort in visually aligning noteheads to the note guides, but makes it impossible to align notes close to each other. Enter the notes, rests and accidentals for all other staves in the system.

3) It is rare for a whole number of bars to fit on a single system at the first pass. SharpScore provides justification

options, which allow you to spread (or compress!) the symbols on a system so that they fill the system exactly. Now is the time to do this, if you need to, by selection the Justify System option from the edit toolbox and clicking on the staff.

4) Group the notes into chords and beamed groups. Having selected the edit toolbox grouping option, dragging rectangles around groups of notes adds beams and groups vertical collections of notes into chords. Beams may be re-aligned by selecting the Move tool. (It is useful at to have object markers displayed: these are the points at which the respective objects may be selected for moving or deletion.)

5) Add articulation. This is perhaps the area in which musical notation is most varied. SharpScore provides a rich variety of articulation and ornamentation symbols, some of which may be extended to any desired length (for example trills, arpeggio symbols, glissandi). Once again, the note guides are useful for aligning symbols with particular notes. For really detailed work a magnification option makes it possible to work on the score at double the original size: conversely, if staff spacing and justification need to be changed, 1/3 and 2/3 size magnifications may be used.

6) Add dynamics. Crescendo/decelando hairpins may be made as long as required, standard dynamic indications are also available.

7) Add text. Tempo and expressive indications are added as ordinary text, with fonts selectable from whichever GDOS fonts you have installed, and the usual range of effects are available. From the point of view of consistency, when you start work on a score you should decide which typefaces, point sizes and effects you will use for particular purposes (for example, ten-point

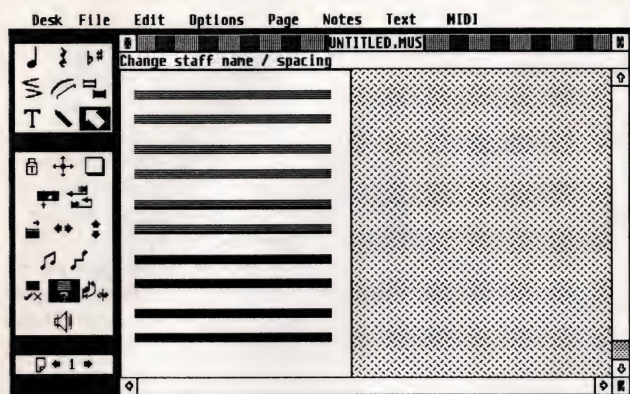
bold Roman for tempo indications, eight-point italic Swiss for expressive directions).

Automatic beaming and note spacing saves a little of this work (although as already mentioned, without a Falcon the speed of the GEM screen redraw might put you off using these features to any great extent). With automatic beaming, every note added to a sequence of quavers, semiquavers and so on is joined to them, the stems and beam flipping from above to below the noteheads if required. The proportions for automatic spacing (these are also used when MIDI is used for data input) are set up in a dialog box: this allows you to choose a base rhythmic value and associate it with a physical distance on the staff (for example, you might choose to separate a crochet from a succeeding note by 1 centimetre), and then to define all other spacings between adjacent values proportionally. By default these are set to 3:2 (so a minim is set in 1.5 times the space of a crochet, a quaver in 2/3 of the space), but it is interesting to experiment with higher proportions, particularly those found between adjacent terms of the Fibonacci series (1,1,2,3,5,8,13,21...), as these approximate more and more closely to the Golden Section (1:1.718...). There is at least one music typesetting system which has this built-in! You can also choose to justify a system according to these proportions after data has been entered without automatic spacing.

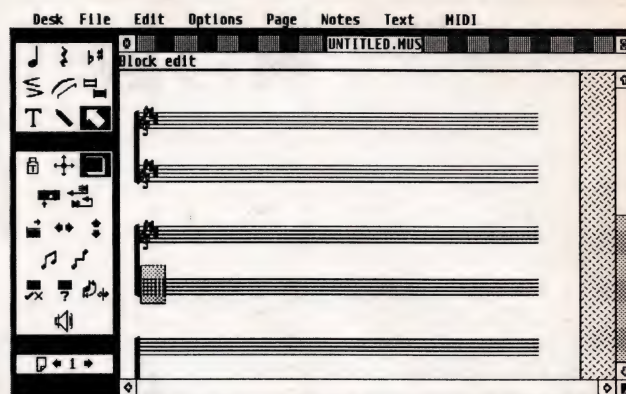
Extra pages are added as required. Just as when creating a new score, you are given the option of using a template or defining a new layout: in most cases you will want to use the template you have already set up. Once the entire score is entered, print it out and proof-read it. It is surprising how many silly errors slip in, and it is easier to detect these on paper than on screen, even if you are using a large monitor. Any symbol may be moved or deleted, and there are facilities for moving bars between lines and systems between pages if disaster has struck and you have missed out a whole chunk of your masterpiece. Bar numbers, rehearsal marks and page numbers are added now (although it would be useful to have this done automatically, perhaps too with facilities for defining a page header and footer, although some of this can be set up on a template page).

If you are preparing a score for performance, the next important step is creating instrumental parts from the score. In previous versions of Music DTP, this had to be done by creating a new score, which is opened in a second window, and then manually copying blocks from individual staves in the original to the new score. While the editing alignment functions made this a little less laborious than it sounds, it was not





△ The first stage in creating a score is setting up a page template. Here a layout has been defined, and the staves are being spaced for a guitar duet arrangement. Working at 1/3 size makes it possible to see the entire page.



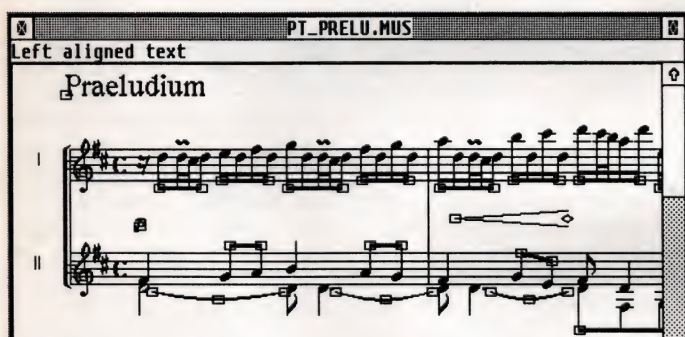
△ Next, systems and blocks are defined, and clefs and key signatures are added. After this the page is saved as a template.



△ The first two staves have been named, and notes are being placed. The top part was added first, then the note guides displayed. This makes alignment of a second part easy.



△ Notes are now beamed together into groups. The small squares are symbol markers, which may be used to reposition beams.



△ Some beams have been moved, and articulation, dynamics and text have been added.

a particularly satisfactory solution, and SharpScore at last gives the option of creating parts automatically. Parts can be extracted either by name or by number. If extracting by name two names are given, one a full name which you may have used on the first page of the score, the second an abbreviation for subsequent pages (for example, Violin 1/V.1). This has the disadvantage that all staves must be named in each system, and is really only useful on large scores with only one or two systems per page. If extracting by number, the number of the staff in the first system is given: this staff will then be extracted

from each system to build the separate part. The part is built into a new score, which may then be edited as required (for example, by moving systems between adjacent pages to improve page turns).

### Printing

Typically, SharpScore output is via a standard GEM printer device. Drivers and fonts are provided for a selection of 9- and 24-pin dot matrix printers, the Atari SLM Laser Printer, HP Deskjet and Laserjet, and Canon BJ and P Series printers. As GEM is used you may, of course, substitute any printer driver, as

long as one of the font sets matches the resolution available for the driver. If fonts supporting your required output resolution do not appear on the distribution disks, Take Control are generally able to provide a suitable set.

On my Deskjet 500, and with Font-kit's FastPrint installed, a complex page with ten staves and over 600 symbols of various types took some 90 seconds to print. Compared with some music printing programs, this is rapid, and corresponds to the standard output rate I get when using GEM. The final result is of extremely high quality: at 300 dpi the commonly-experienced 'stepping' of slanted beams is barely discernable (it is more apparent on the crescendo/decrescendo symbols, built from thinner lines which are usually at a very small angle from the horizontal, but I can live with this, as a restriction imposed by the resolution of my printer rather than the program). Note-heads are clear, symbols are well-defined, and there is a 'rightness' about the proportions of notes, clefs and the other elements of the notation which is exceptionally pleasing to the eye. I have paid good money for published scores which look a good deal less professional than these! A nice touch is that the printed widths of staff lines, bar lines, note beams, hairpins, phrase marks and so on may be set explicitly in a Printer

Options dialog.

In addition to printing to the installed printer, it is possible to direct output to a .GEM metafile or a .IMG bitmap, for import and subsequent editing in another DTP package. The option to export to encapsulated PostScript is also provided, which should result in output of an exceptional quality if passed to a DTP bureau for high-resolution PostScript printing. Oddly, the PostScript header file required for this must be placed in the temporary folder defined for the configuration in order for this function to work: this is surely a mistake (not what temporary folders are for!).

### Conclusions

Like a word processor (or indeed any other type of software), the quality of a music notation program rests on a number of points. Does it offer all the symbols you need? Is it easy to use? (Given the complexity of musical notation, it is perhaps unrealistic to expect such a program to allow you to work with the same fluency as working with text in a word processor: however, the last thing you want is a program that actively works against you.) How good is the final printed output?

In all these areas, it is hard to fault SharpScore. The excellent quality of the printed result has already been descri-



bed. The program offers an impressive range of notation symbols: the only omissions I could see were some of the more arcane Baroque ornamentation symbols, and some of the symbols now used relatively commonly in modern scores, for percussion instruments/beaters and so on, neither of which is a particularly large loss. If you are feeling adventurous, it is always possible to build a GEM font with anything extra you feel you need. The availability of free graphics, and facilities to import .GEM and .IMG files, means that your score can incorporate any number of odd avant-garde notations (you could also use the program to design title pages for your score).

Ease of use seems to have been a guiding principle in the design of SharpScore. If you are used to writing out music by hand, you may need to stop and think, and work out a way of using the program effectively: this said, once you have found your way around the keyboard short-cuts, input of notation is as quick, if not quicker, than doing a professional job of copying onto transparencies. Any individual

user will doubtless be able to point to individual features which they feel could have been implemented better (personally, I find the mechanism for placing ties and phrase marks laborious: instead of clicking on start, end and mid points it would be better to drag a line between the start and end points, then pick up the centre point to change the curve if required).

Take Control seem genuinely pleased to receive suggestions for improvements and additions to the program (for example, the toolbox for mediaeval notation has been developed in response to user requests). This is an important point: since its first appearance (as Music DTP 1.0, released in 1989) successive versions have added increasing numbers of notation symbols, improved editing functions and enhanced interfaces to MIDI and external file formats. This commitment to the product is refreshing (particularly as most - if not all - of the other notation programs available, such as Encore and Dr T's Copyist, are nearing the end of their life on the ST, and are unlikely to be improved). With the increased

availability of the Falcon opening up a new market for professional Atari software, Take Control are well placed to take the lead in music notation programs. They deserve every success: SharpScore is a very fine program indeed.

### Summary

#### Points For:

- ✓ Comprehensive range of notation symbols
- ✓ Powerful editing facilities
- ✓ Import/export to MIDI, .IMG, .GEM, PostScript
- ✓ Effective use of GEM
- ✓ Extremely high quality output
- ✓ Well supported, regularly enhanced

#### Points Against:

- ✗ Price puts it out of the reach of many users
- ✗ Options for automatic bar and page numbering would be useful



### DETAILS

Product:..... SharpScore (formerly Music DTP)  
 Version:..... 3.0  
 Publisher:..... Take Control, Institute of Research and Development  
 Vincent Drive  
 Birmingham, B15 2SQ  
 Tel:..... 021 415 4155  
 Fax:..... 021 415 4156  
 Price:..... £395.00 (+ VAT)  
 Upgrades..... from versions of Music DTP are available from the publishers, as is a demonstration disk and information pack - phone for details.  
 Manifest:..... 130-page A4 ring-bound manual, 6 double-sided disks  
 System:..... Atari ST, TT, Falcon, colour or monochrome monitor, at least 1MB memory, at least 1 double-sided disk drive

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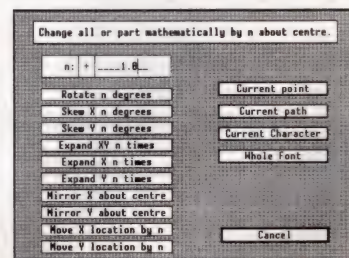
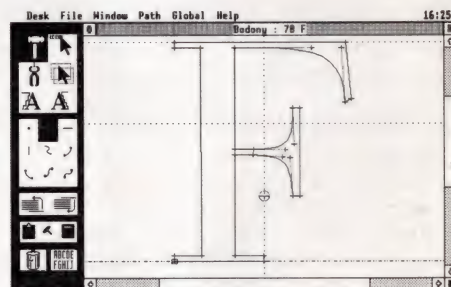
This is a fully featured editing program for creating and editing Calamus CFN-format font files. Also, when used in conjunction with C-Font or Fontkit Plus, CFN files created with Fonty can be used to generate sets of bit-mapped fonts for use in packages such as: K-Spread4, Degas Elite, Timeworks DTP, Calligrapher, That's Write, Redacteur 3, and Wordflair.

Fonty features include: draw mode icons (Hammer mode, Pliers mode, Move mode, Select path mode, left and right kern mode), Grids and Guide Lines, Manual and Automatic kerning, Backgrounds for tracing (a Degas picture or a complete GEM font), a full feature Calculator to mathematically manipulate fonts, and Window scaling. A separate program, PFB2CFN, reads a Postscript Type 1 Font file and copies it into a Calamus CFN font file.

**£11.95**

## Fonty

### Calamus Font Editor



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# Going On-Line

Mark Baines

## Point Systems (Part 1)

In my efforts to encourage readers on-line, I've always been very conscious of the perception that, to most people, comms is an expensive activity. Nowadays, no-one who logs on for more than a few odd sessions needs go through the rigmarole of typing in their user-ID, password, negotiating menus, reading messages as they flow past, thinking about replying to them, battling with strange editors and line noise, and clocking up enormous bills. If you are still doing this then you are either masochistic or haven't been listening! In the past I've advocated ways in which a serious comms user can save time and money when on-line. The use of terminal program buffers or history files, macros and scripts and auto-logout procedures are all very significant. The introduction of several off-line readers for the ST two years ago cut the cost of regular comms use to a fraction.

There are still some difficulties with the above automated approach. Most (if not all?) off-line readers won't allow the sending of NetMail (private EMail to other users on the network) off-line and it is impossible to download and upload files without manual intervention on-line. Referring to older messages also is difficult or impossible as only the current packet of messages is ever active.

### Point Systems

For those who are used to off-line readers and are making regular contributions to the networks in the echoes, there is another step to take, to become a Point system. This makes for very quick, extremely efficient and convenient comms sessions, cutting on-line costs to the bare minimum. In Issue 31 I mentioned Point systems in the context of network addressing. Points are essentially private nodes and below the node (bulletin board) in the network hierarchy. They don't

have a bulletin board program running and so don't allow callers and don't have full sysop status (although on NeST you can become a private node instead of a Point with full sysop rights). What Points do have is the same mailer and mail management utility programs that sysops have as well as the best off-line reader there is - LED.

However, not just anybody can become a Point. A Point system is intended to aid those that make frequent and regular contributions to the network by way of messages and files. If you don't then it is unlikely that being a Point would be advantageous to you or your sysop. Your sysop or boss has to set his system up to accept you and this creates extra work and storage requirements for his system, so you can't go ahead without his permission and help. It would be impossible to detail the setting up of Point systems here, not even in ten such articles could I cover all the essentials. This is a complex procedure and only something that you can do with your sysop or other Points. Having said that, it is manageable as there are many people out there all too willing to give advice and send sample configuration files. There are also certain software and hardware requirements, at least 1MB of RAM and a hard disk is a necessity. You could get by with two floppy drives - it has been done - but things would be awkward and slow. A Hayes compatible modem is required.

### The Mailer - BinkleyTerm

Binkley is used by most ST sysops and is a very accomplished piece of software still in development. It is a FidoNet compatible mailer ported from the PC and is primarily used to automate the sending and receiving of mail, echo messages and files within FidoNet compatible networks, which includes NeST, TurboNet, FNet and AtariNet. Binkley can be

set up to call any node in a nodelist and through the exchange of various handshaking protocols, establish a communication which involves the automatic, mutual transfer of message packets and files, avoiding the normal bulletin board software. Binkley's primary transfer protocol is Janus which allows full duplex transfers, that is, it can upload and download a file at the same time. In this way, bulletin boards can, usually at the dead of night and unattended, exchange all the material that makes up their echoes and file lists as well as private NetMail. The exchange is quick as there is no human interaction and everything is already compressed into a single packet for each network ready waiting for transmission.

For a Point system, Binkley works the same way. You load it up and tell it to call your boss, whereupon it connects and exchanges packets. You can be on-line for as little as a few minutes in total but in that time have sent all your replies, your NetMail, asked for any files from your boss's file lists and received all the new messages in the conferences you are interested in, your NetMail and file requests. Very quick, simple and convenient.

However, Binkley's configuration file isn't very easy, at first, to set up as each is specific to that system. The documentation is big and very good on the whole, but like most documentation written by programmers it makes

too many assumptions where it matters. No new user will get the configuration exactly right the first time, but your sysop will help and give you a basic configuration file to be going on with.

Binkley can be used as a dumb terminal program but is very basic and I wouldn't advise its use in preference to the many other excellent terminal programs available. Normally, Binkley would be used for polling your boss but it can also be made to 'crash' through to other bulletin boards, that is, automatically log on to them without involving the bulletin board software front end. This is useful for performing File Requests or FREQs where you ask that system to send you a file you know they have in their file download list. Normally this wouldn't be possible unless you had an active account with them and logged on in the normal way. Obviously, you can't have an active account with every BBS, but with a Point system you do!

Next month, I'll talk about the other two essential parts of the Point system - the mail management utility programs and the off-line reader.

EMail:  
Internet: msbaines@cix.com-pulink.co.uk  
FidoNet: 2:259/  
29.10@fidonet.org  
NeST: 90:105/5@nest.ftn  
TurboNet: 100:106/0.10@turbonet.ftn

▷ BinkleyTerm - just about to poll my boss with three mail packets waiting in the Outbound directory, one for each network.

Point: 100:106/0.10 @ Turbonet.Ftn				Linnhe Node			
Current Settings		Today at a Glance		Pending Outbound Mail			
Tue Aug 83 @ 13:00		BBS/Mail: 0/0/0		Node	Files	Size	Age Status
Event: 0/0		Call: Out: 0		2:259/29	1	300	0 N
Port: 2400 Com1		Send/Cost: 0/0		70:105/0	1	845	0 N
Status: Dialing		Files I/O: 0/0		100:106/0	1	2573	0 N
Memory: 1939026		Last: None					
Recent Activity							
+ 12:59:54 begin, Bink-ST 3.10 [Jul 12 1993], free memory 1947210							
+ 13:00:02 Processing node 100:106/0 @ Turbonet.Ftn -- Scottish Host							
+ 13:00:02 Dialing 031-5569734							
Transfer Status							
Currently Polling Node 100:106/0 @ Turbonet.Ftn							
BinkleyTerm-ST 3.10a-beta-3, Debug, PureC>							

Press [HELP] For Help



# Imagecopy 2

## Image utility for Atari ST/TT/Falcon computers

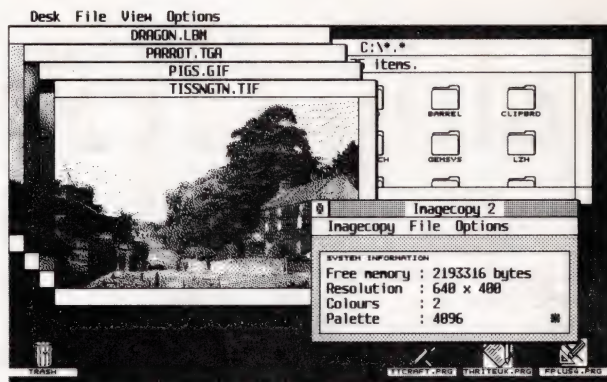
Copy images from screen in any ST/TT/Falcon video mode. Images can be copied by pressing Alt-Help, and a flexible rubber-banding system allows images to be selected with a fine degree of accuracy.

Display images in any ST/TT/Falcon video mode. Colour-mapping and dithering is used to display images in video modes which contain fewer colours. Several images may be displayed simultaneously in GEM-window or full-screen display modes.

Print images and screen dumps in black and white or colour on a wide range of printers, including 9-pin and 24-pin dot-matrix printers, Bubblejet printers, Deskjet, and Laserjet printers. Imagecopy 2 offers print-scaling, variable-sized halftones (up to 16x16) for realistic colour depth, and comprehensive colour controls, and is able to print images containing up to sixteen million different colours (24-bit true-colour). Print-colour options include: monochrome, CMY colour, CMYK colour, CMY separation, and CMYK separation. Colour separation modes can be used to print full-colour images on a monochrome printer.

Convert images between different formats (see next paragraph).

Extensive range of image formats: Imagecopy reads the following formats: TIFF, Targa, IMG, extended IMG, DEGAS,



Neochrome, Art Director, Tiny, GIF, Spectrum, IFF/Deluxe Paint, Windows bitmap, OS/2 bitmap, PC Paintbrush (PCX), and Macpaint. Images can be saved in the following formats: TIFF, Targa, extended IMG, DEGAS, and RSC. TIFF support includes baseline TIFF apart from Huffman compression (uncommon), common extensions such as LZW compression, and the ability to read non-standard TIFF images produced by ST programs such as Retouche. The ability to print TIFF files allows Imagecopy 2 to be used as a print program with True Paint.

User-friendly GEM interface, including window menu bar, pop-up menus, colour sliders. Can be used as an accessory or stand-alone program.

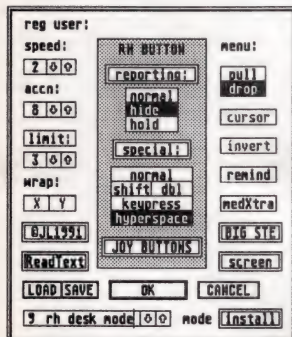
**Price - £19.95**

Upgrades: from Imagecopy v1  
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# Mouse Tricks 2



\* Mouse Tricks combines many of the functions of existing mouse utilities in a single desk accessory and adds numerous extra functions of its own.

\* Mouse Tricks can set up suitable modes of mouse behaviour for particular programs. An optional screen saver is also included.

\* Mouse speed can be reduced as well as increased. This allows a cross-hair mouse add-on such as "Tracey" to trace artwork of any size.

\* All the functions of Mouse Tricks can be adjusted through a set of easy to follow dialog boxes.

\* As many as 20 different settings can be named and saved, and each mode can be selected via a dialog or a user selected keycode.

\* Mouse Tricks keeps a list of up to 40 different programs; for each program on the list you can specify both the mode you wish to be installed when a program is run, and the maximum amount of memory initially available to that program.

\* Mouse Tricks contains a text reading utility, Read Text, with which you can load, read and switch between as many as eight text files from within any program that allows access to desk accessories.

\* Read Text can also be invoked by double-clicking on the desktop icon of the file you want to read, or by pressing a user defined keycode.

\* Big STE is a virtual screen utility that uses the STE's video display hardware to provide instantaneous smooth scrolling around virtual large screens of any (feasible) dimensions, with the option of an interlaced display for any screens with double (or greater) the normal screen height.

\* Tutorial function to help you learn to use Mouse Tricks.

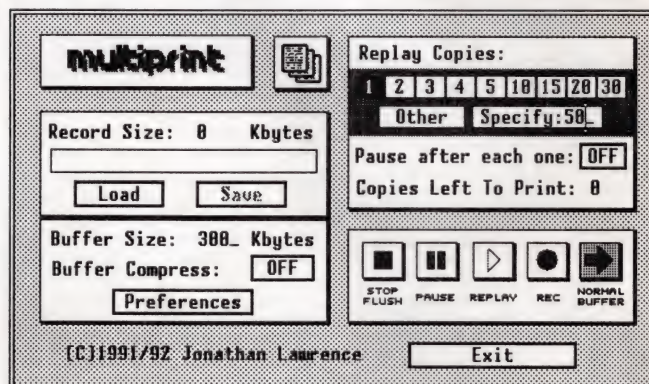
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# Multiprint



Multiprint is an intelligent printer buffer that records data sent to your printer via the parallel port or serial port. Multiprint is controlled by an intuitive dialog box with VCR style buttons. Features include:

Replay of recorded data for high speed multi-copy printing of letterheads or leaflets.

Saving of data to printer file (\*.PRN or compressed \*.PCN) and loading of buffer with previously created printer file - for quick'n'easy reprinting at a later date. No need to rerun your DTP or art program.

Option for compressed buffer and printer files for minimum demands on memory and disk space. Average 300 dpi DTP data compressed to 40% of its original size.

Load and print printer files produced by other programs - and compress them to Multiprint's own PCN format for better use of disk space.

Background printing with "Priority Delay" allows you to share a chosen percentage of your computer's time with Multiprint.

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# Using GFA Basic

Prompted by Andy Taylor's Letter in Forum, STA 28, I decided I'd step forward and do a series of teaching BASIC for beginners. This series will concentrate on using GFA Basic V3.5E - the last version GFA produced (PC defectors...). The reasons are: 1) It's the only ST Basic I've used, and 2) It was free on a certain glossy ST Mag about eight months ago (!). Oh, and 3) It's fast.

Over about six issues, we will look at the building blocks of programming techniques, and GFA Basic examples. At the end of each month's article I will set a few tasks for you to be getting on with. Incidentally all the programs listed for each article will be available on the next STADisk Mag after that article. I will also put my own answers to the tasks onto the disk mag for those who perhaps need a bit of help and for the plain nosy.

To follow this tutorial effectively, you'll need an ST, GFA Basic V3 (V3.5E pref), ideally the GFA Manual, strong coffee and a bit of time. After six parts, don't expect to be programming games, but do expect to understand how to break a requirement down into its component tasks, even if you can't fully write those parts in actual code. There are many other ST Basics, such as FAST BASIC, ST BASIC, FirST & HiSoft Basic. The fundamentals of programming will be the same, but the commands probably won't. For the latter two, the ST Club sell a very good tuition book on how to program FirST Basic, and I can recommend this to FirST Basic owners.

## Off to the shops

Well, we can start from the pretty safe assumption that you have all 'programmed' before! It may not have been on a computer, but in every day life, you are effectively programming your own actions. Going to the shops is a perfect example to explain computer programs - You write on the list a number of jobs to do. If you're more organised, you would write the list in order of the shops you need to visit. You may also write on this list a few notes to yourself that are not things to do, but to remember. Once you have obeyed everything on the list, you go home. A computer program is very similar. It is no more than a list of instructions that the computer 'reads' from left to right, top to bottom. Once it gets to the end, it stops.

## Up and running

We are going to type in the first program into GFA. But first we need to run GFA Basic. I'm assuming that you have a copy of GFA Basic. If you bought it, or got it from the glossy mag, you need to copy GFA-BASIC.PRG to a blank disk and run GFABASIC from there. You can then safely save any programs we type in onto this disk, without fear of losing the original disk containing GFA Basic.

Make sure you are in ST Medium or ST High resolution. Double Click on GFABASIC.PRG and after a few moments you should have a white screen with two rows of black commands at the top of screen. (Note: GFA Basic works, sort of, on the Falcon, if you have one. Either go into ST Med or ST High emulations, or select 2 colours in the Video dialogue - GFA Basic should run then. There are a few other oddities however...). These top two rows are a bit like a menu bar: selecting them with the mouse makes things happen. We

will be using the Load, Save and Run options later. For more details on actually using the editor, I must draw your attention to the GFA Basic manual, as I don't have the space to teach the way the editor works in detail here.

Type in each of the lines from Fig 1.1 as you see it. At the end of each line, press RETURN. If you have made a mistake, GFA Basic will not let you leave the line until it is remedied - a handy feature, but also annoying when new to it! Once you have typed in the listing, move the mouse over Run and click the left button.

The two lines of message appear on the top of the screen, and an alert box has appeared to tell you GFA Basic has finished running the program.

So, what happened? Your program contained a list of 6 commands. The first two started REM. This means REMARK, or comment - It tells GFA Basic to ignore what follows on the line! Why? Well it gives provision for you to put messages to yourself anywhere within a program and not confuse GFA Basic in the process - similar to messages to yourself in the shopping list example earlier.

On the third line we see the command CLS. This is the first command GFA actually acts upon. This command means CLear the Screen. What it does is exactly that, it gives a nice white blank screen. GFA then moves to the next line. On this line is the command PRINT. This command tells GFA to write something on the screen. What is to be written is enclosed within " marks. As you saw, the contents of that line appeared at the very top of the screen when you ran the program. GFA Basic then proceeded to the next line, another PRINT, and so the same thing happens. As you saw, the second PRINT caused the writing to

appear underneath the first. The final command was END. This tells GFA that the program stops here and so GFA printed the Alert box to tell you it's all over.

If you want to save the program, select SAVE from the black menu bar at the top. A File selector appears. You need to tap in a filename under which to store this program, followed by 'GFA'. The program is then saved onto your working copy disk.

For more information on PRINT, CLS and REM, see pages 131, 281 and 233 respectively in the V3 GFA Basic manual, although we will use them more in future episodes.

## Round and round

Finally this issue we are going to introduce the idea of repetition. What has been described so far is the idea of reading a whole list to the end and then stopping. Repetition is the first of a number of standard programming concepts that make computers very good at doing certain tasks (and faster than us old humans!). There are many ways of getting GFA Basic to repeat parts of the program a number of times. The in-word to describe this is LOOPING, and the LOOP command is one of many that can be used, incidentally. Right now we will look at the most basic (and probably the most useless!) looping command. It does, however, serve a purpose to show an example.

Using the up and down arrow keys, move the cursor over the E of END in the program. Press the DELETE key, this erases the command END letter by letter. Instead type in the line 'GOTO start'. Now move the cursor up the screen to the

line with the first PRINT statement on it. Press INSERT. A Blank line is created and now type in 'start:'. See Example 1.2 for the new listing of how it should finally look. Now select Run from the menu (or press SHIFT & F10 together). This time you should see the two lines of writing appear continuously down the screen, and at the bottom it all starts to scroll upwards like the football scores typewriter on Grandstand at 5pm(!). And indeed it keeps going...

## Where's the brake?

When you've had enough, hold down the CONTROL, LEFT SHIFT and ALTERNATE keys. The program will stop and a message appears 'Stop Program?'. You have 'interrupted' the program and so it has stopped. Selecting STOP will take you back to the editor screen.

This form of looping is called UN-CONDITIONAL - it keeps going regardless of time, boredom, sanity.... When GFA Basic gets to the GOTO command, it's being told to go to a different part of the program. That part of the program is indicated by the word 'start'. GFA then scans for any part of the program that contains the label 'start:'. The colon is very important as it signifies a 'label'. A label is not a command but a tag to say 'this part of the program is called...'. GFA returns to 'start:', and starts reading the list again from there. It thus becomes apparent why the program never ends - it carries on back down the list until the GOTO line again and we go round and round.

Well that's it for episode one. You're off the hook - no tasks this month as we've not covered enough! However, eager folk may like to look up 'variables' and 'FOR...NEXT' if they want to be a step ahead next month!

Any questions (only about this series please) to Tim Finch, GFA Basic Tutorial, c/o ST Club, 2 Broadway, Nottingham. I'll try and answer relevant questions and points in these pages.

```
File Save [Save,A] Quit | New | [B]kSta|Replac| Pg | Txt 16|Direct| Run | 10:43:28
| Load |Merge |List |Block |BlkEnd| Find | Pg |Insert| Flip | Test|
```

This is the first GFA Basic Tutorial Program

CLS

PRINT "GFA Basic is quite fast really"

PRINT "It gets round the shops faster than me!"

END

REM Example Program 1.2

REM This is the first GFA Basic Tutorial Program

CLS

start:

PRINT "GFA Basic is quite fast really"

PRINT "It gets round the shops faster than me!"

END

GOTO start

## The Author

The author Tim Finch is a GFA Basic programmer who runs Degsoft Software; he wrote Address V1.6 which the ST Club sell. He works also for a high street computer retail store and has been programming different BASICs for about fourteen years.



Michael Baxter takes a look at a program from American developers WizWorks, which promises to be a God-send to anyone struggling with disorganised collections of clip art....

# ImageCAT

Anyone who has experimented with DTP in all but the most casual of manners will be only too aware of the value of clip art. In fact, I think it's true to say that you can never have enough images to assist you in the creation of a 'perfect' page, something which pushes DTP addicts to acquire collections of images for every occasion, no matter how diverse. Solving one problem often creates another, however, and sooner or later it becomes very difficult to remember just exactly which picture is which, and this problem is often compounded by those cryptic Gemdos eight character filenames. Picture the scene - you have just spent two hours creating a masterpiece flyer in PageStream (one hour of which was spent watching the screen redraw - sorry, couldn't resist that one) and you decide it could do with that scanned image of wotsisname in the bottom corner of the page. You then glance across to your collection of clip art, manifested as a pile of two-dozen floppy disks sporting bugger-all in the way of meaningful descriptions. This is where Sod's Law comes into play, and in this case, the file you will be looking for will be on the twenty-fourth disk you slam into the drive, and that three hundred-and-odd screen redraws later, you will finally find the image you started looking for three hours ago.

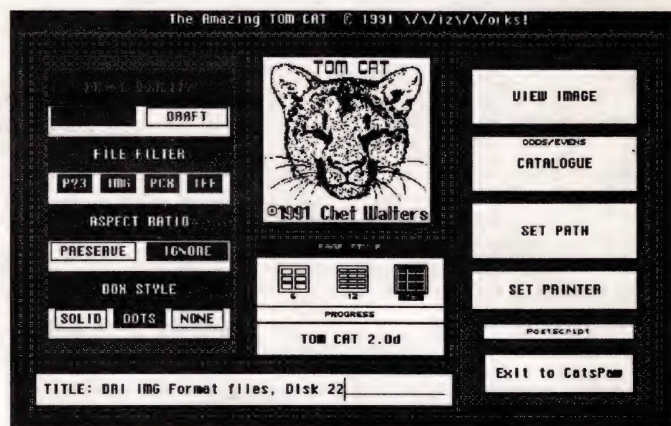
It's experiences like this that drive users to compiling some sort of clip-art catalogue, but let's face it, it's not the most riveting of pastimes, which is why it often gets relegated to the list of jobs for tomorrow. Attempts to code programs which would do this laborious process automatically have - by and large -- crashed and burned, probably borne of the fact that it isn't such an easy programming task as it may first appear, especially given the diversity of graphic file formats. One such program was IMG CAT, a 1989 shareware release, which at best could be described as a temperamental GFA Basic/GDOS collabo-

ration which failed more times than it worked, a trait which has subsequently been blamed - not surprisingly - on Atari's much maligned GDOS. To the programmers' credit, however, they have stuck with it, and now have a product fit for commercial release which promises to ease the headaches of many DTPers currently struggling with anonymous clip-art collections.

Image CAT version 2 bears little resemblance to its Shareware counterpart. The collection of programs that go up to make the ImageCAT package have been coded entirely in assembly language, and have dispensed with GDOS altogether. As a result, Image CAT now runs faster, understands a far greater range of file formats, and thankfully, it is far more stable.

## Installation

ImageCAT subscribes to the increasingly popular anti-piracy method of name registration. The disk is unusable until you enter your user details into an installation program, after which you can copy your working files to wherever you like on your system. The programs work on any Atari machine up to the TT030 and it should work OK on that Falcon030. It's fully compatible with



△ Possibly the most useful module in the package, Tom Cat will automatically catalogue any number of IMG, Degas, PCX and IFF files stored on any given disk or directory. Six, twelve or fifteen images per page can be specified.

big screen single-plane monitors or emulators, and even custom graphic cards such as ISAAC and Crazy Dots. The supplied manual runs to 13 pages and is supplemented with a 20K readme file on the disk. There is more than a fair smattering of humour throughout the text, and it's obvious from the strong feline theme that the author likes his pussies. Hmmm...

## Operation

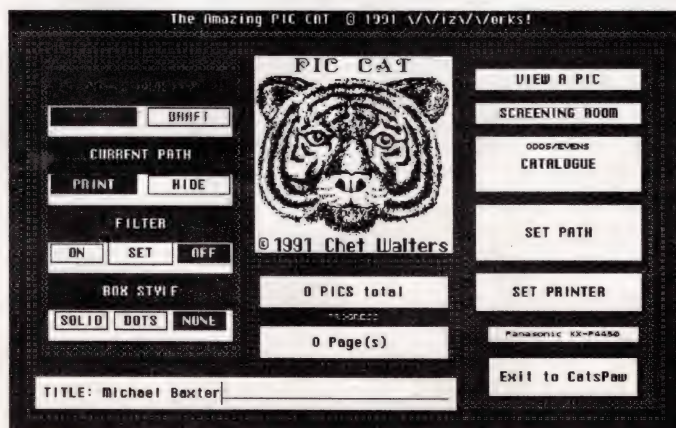
The ImageCAT system comprises of several stand-alone PRG files, each of which handles one or more specific file-types. As a result, if your clip art collection is manifested in a multitude of file formats, then you will inevitably be caught up in a tedious load-print-quit cycle. I can't understand why the programmer has elected to follow this fragmented approach - perhaps the only reason is to provide support for users of half-meg machines which possibly would be unable to handle a larger integrated package. It's even more baffling when you realise that the

interface for each program is more or less identical. The CatsPaw shell is a half-hearted attempt at integration, but the needless program file loading and reloading is a pain, especially when working from floppies. Perhaps some sort of fully integrated and potentially more versatile version will become available in the not-too-distant future.

Since each program works in roughly the same manner, it would be pointless to describe the operation of each one in turn. The table opposite details each of the ImageCAT programs, the files it can handle, and any operational limitations. The cataloguing process in each module is very simple, and providing your printer does not need to be manually fed with sheets of paper, you can nip down the pub for a swift pint (or six) while the program gets to work on any amount - potentially thousands - of files. Simply tell the program which type of printer you have connected to the computer, which disk or directory the graphic files can be found, set a couple of self explanatory user options and away you go.

## Printing Options

Considering that optimum printed quality is not this program's goal, the results are quite impressive. High quality and draft printing modes are supported on suitable printers, and the Tom-Cat module allows six, twelve or fifteen images to be printed on a single page, automatically scaling images to fit the chosen page style. PicCat also sports a selection of screening algorithms which can significantly enhance print quality, especially with colour images printed on a monochrome printer. Nevertheless, the program's dispensation with GDOS may cause some printer owners a few headaches. The program comes with a limited set



△ PIC Cat is a curious sidekick to TomCat, with the page style features and IFF/PCX formats removed but with added support for Tiny compressed files and some rather clever file filtering and image dithering routines. Why the two could not be merged into one program is anyone's guess.



of proprietary printer drivers, and fair enough, if you own a SLM, Epson or Laserjet compatible printer then you should have no problems. There are one or two niggling omissions however, the most glaring of which is a Canon BJ10/BJ300 driver which is unforgivable considering the worldwide popularity of these machines. Wiz Works claim to be developing printer drivers to meet demand, but at the time of writing there is still no sign of a Canon driver.

### Summary

#### For:

- ✓ Quick and easy way to get your clip art onto paper
- ✓ Good support for bitmap files

#### Against:

- ✗ Vector format support is poor
- ✗ Limited printer drivers - Canon drivers are the most glaring omission
- ✗ Does nothing that a DTP package couldn't handle
- ✗ Lack of integration is annoying

### Conclusion

There's no doubt about the value of this program to anyone who possesses a large library of clip art - its facilities make the cataloguing of large, even huge quantities of clip-art files a relatively straightforward task. Nevertheless, despite ImageCAT maturing to version 2, there is still a lot to be done before it

could be considered an invaluable DTP aid, not least of which is inclusion of CVG and GEM/3 file format support, and perhaps Adobe illustrator format - or is that pushing my luck too far? A greater degree of integration would make for slicker operation, and would probably open the door to full automation and multi-format clip art printouts. But at the end of the day, ImageCAT does nothing that a decent DTP package couldn't handle standing on its head once a template page had been created (albeit with a little more user interaction), and that route has the added benefit of understanding every graphic file format that you are likely to be working with anyway. The level of automation that ImageCAT offers will be of use when first cataloguing a large library of images, and some users will no doubt purchase the program on this strength alone, but to anyone who has already catalogued their clip art, or who is working with a relatively small amount of files, would probably feel more benefit with a DTP template page and £25 in their pockets. As it stands then, ImageCAT is well worth a look if you are working mainly with large quantities of bitmap clip art (especially IMG), and you need an unfussy, automated system to catalogue your files. Just don't expect too much in the way of versatility...

## But will it work for me?

Given below is a brief description of each of the ImageCAT programs, its supported file types and operational limitations.

### TOM CAT

File Types: IMG, PCX, IFF

Full support for bi-level IMG format, as well as partial support for colour ST/TT IMG and XIMG files with a standard eight word header. Any other format is unlikely to work. Mono PC Paintbrush files print with no problems, but colour files are less reliable. All Amiga IFF files should print perfectly providing they are of compression type 0 or 1: Forget using your DPaint images though - compression type 2. Can print 6,12 or 15 images per page, with auto sizing and aspect ratio preservation.

### PIC CAT

File Types: Degas Normal and Compressed, Neo, Tiny

Full support for all of the above file types. Impressive screening algorithms available to improve the printed quality of images, especially colour-to-mono rendering.

### GEM CAT

File Types: GEM

Will print standard GEM format files, minus any bitmap images or text. Since GEMCat does not use GDOS, GEM images are rendered directly to screen then sent directly to an output device as a screen dump. As a result, the screen mode you are operating in directly affects the printed resolution of your images.

### MAC CAT

File Types: Claris MacPaint

Prints 576x720 MAC format files, as well as pseudo-Mac format files which originate from the PC world, and TouchUp on the ST.

### ThumbCAT

File Types: PI3, PC3, IMG, IFF, PCX

A clone of TomCat. Prints 49 images per A4 page for a quick thumbnail view of your catalogue.

### MGS CAT

File Type: MGS Mug Shot data files

Claimed to print all of the parts in all of the parts bins of a MugShot file, although I have not been able to test this.

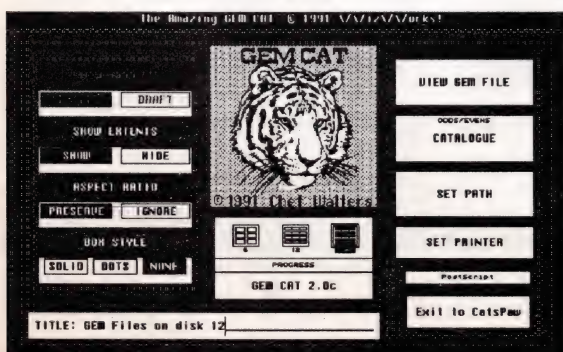
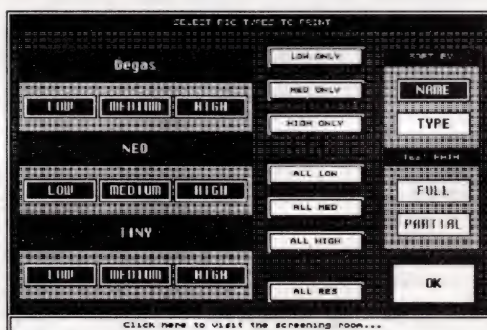
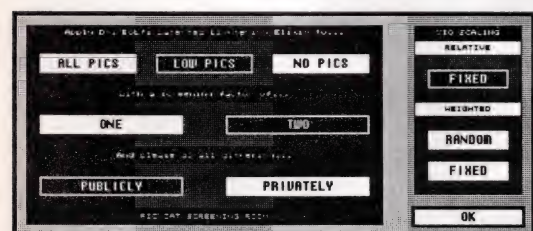
### ICON CAT

FileTypes: NeoDesk NIC, DC Desktop ICE, Printmaster SHP

Prints icon files and/or masks, either one file or one folder at a time.



◁ The Cat's Paw Dispatcher is basically an auto-loader for the main application programs that make up the ImageCAT package; er, apart from MacCAT, that is...



Above left: PicCAT's screening facilities can lighten the printed quality of images when using high resolution output devices.

Above right: PicCAT's file filter allows you to weed out any combination of Degas, Neo or Tiny files in any resolution. It's a pity this facility wasn't carried over to the other modules...

Left: This is pretty much identical to TomCAT, but this one processes GEM format files.

Product:.....ImageCAT  
Developer: ....Wiz Works!  
Version: .....2.0  
RRP: .....£24.95  
Supplier: .....Ladbroke  
Computing  
International  
33 Ormskirk Rd  
Preston  
Lancs. PR1 2QP  
Tel: .....(0772) 203 166  
Fax: .....(0772) 561 071  
Manifest: .....16-page manual,  
double-sided disk  
System: .....Any ST(E) or  
TT030 system,  
minimum ST med.  
resolution, 1MB  
recommended, TT  
colour mode  
support. Not yet  
tested on Falcon.



# Desktop Publishing with the Atari ST



## Part VII: Importing Graphics

*Günter Minnerup*

If text was all there was to printed matter, the term Desktop Publishing would probably never have been invented. For with a bit of tweaking, any character-based wordprocessor can generate typeset text output of the highest quality: I have seen booklets produced with Protex or TeX that are virtually indistinguishable from anything Calamus could do. Quite simply, however important words may be to communication, DTP wouldn't exist if it wasn't for the fact that, sometimes, a picture can say more than a thousand words.

"Picture" in this context covers anything from a simple ruler line or box to a colour photograph. Anything, in fact, that cannot be adequately represented by ASCII character codes. ASCII codes, for text, are a standard understood by every computer and printer, identifying a numerical value with a particular character. With pictures, the only such standard is "on" or "off" – 0 or 1 in numerical terms – with respect to the smallest available unit on a particular device: the pixel on a monitor, a dot on the printer. It's as simple as that.

But this apparent simplicity hides a great number of difficulties at all stages of graphics processing for DTP. Let us begin at the end, the printed output. If serious DTP begins with laser printers at a resolution of 300 dpi (at least – in these days of increasingly cheap 600 and 1200dpi engines), an A4 sized illustration requires an awful lot of printer dots to be described: nearly a million, in fact, giving a file size of almost a megabyte. Things are even more serious where higher, imagesetter resolutions are involved, and so far we are only talking about black and

white graphics! The quest for high-resolution output, of course, also dictates high-resolution input. A 72dpi Degas bitmap graphic might look acceptable on the monitor screen, but would shrink to minuscule proportions on a high-res printer, or, if sufficiently enlarged to retain its original dimensions, would be distorted beyond recognition. So your illustrations need to be drawn at 300dpi or higher in the first place (on a sufficiently large monitor to be able to see what you are doing), or imported using a high-resolution scanner. Working with the resulting large bitmap files imposes enormous strains on both the processing speed and the storage capacity of the system, of course.

There are two ways out of this. One, of course, is data compression. If the pictures can be saved in compressed format, there will at least be a reduction in disk storage requirements. The search for effective graphics file compression, however, has led to the emergence of a confusing multitude of file formats: IMG, TIFF, GIF, PCX, TARGA, JPEG, IFF, and so on. The most widely used for DTP purposes, the Tagged Image File Format (TIFF), is also the most non-standard of them all, to the point where it can by no means be guaranteed that a program capable of importing TIFF will be able to read the files of a program capable of exporting TIFF.

The other way out is the use of vector rather than bitmap graphics. In a sense, vector graphics are just another form of data compression: rather than describe every pixel, the data files store mathematical descriptions ("vectors") of the basic shapes ("objects") making up the image.

These are then converted to bitmaps for each output device, from the screen to the printer. The two advantages of this approach are resolution-independence (the same file can output to any device) and small file sizes, but the drawbacks almost outweigh these advantages: vector graphics are very poor at describing anything other than clean lines and shapes (you can't vectorise photos), and they can slow the system down tremendously whenever they are converted to bitmaps (screen redraws, printed output). But vectors are established today as the preferred medium for appropriate graphical elements such as boxes, rulers, tints, technical illustrations and, of course, typefaces, begetting another bewildering variety of file formats: from Calamus vector graphics (CVG) to the famous PostScript itself.

The best advice one can give to amateur desktop publishers with a standard home or small business computer setup – for example, a 1 or 2 Mb ST with an SM124/125 monochrome monitor and something like a 40 to 85Mb hard disk – may therefore well be to steer clear of serious involvement in high-resolution graphics, other than simple clipart, boxes and rulers, and perhaps custom logos. It could well be cheaper and quicker to leave anything large and complex to the professionals, supplying the experienced operators of process cameras with originals to be "dropped" into your page layout. Does this mean that most of the features of your DTP package go wasted, and that you might as well return to a wordprocessor? Far from it, since you must still position your blank spaces accurately, flow text around them, provide

captions and so on – in fact, do everything except the pictures themselves.

To do all this yourself requires understanding and experience (which you can acquire, though often painfully) and certain minimal hardware configurations (which you can buy). There is no point, for instance, in tackling even monochrome photographs (let alone colour) if you don't have a high-resolution greyscale scanner (preferably flatbed), a greyscale monitor (preferably large) and a massive hard disk (preferably over 100Mb and fast). If you intend to send your work to an output bureau, you will also need removable cartridge drives of the Syquest type since ordinary floppies will be hopelessly inadequate. I will assume that you have all this and are willing to acquire the experience, so let us turn to the basic knowledge needed to start.

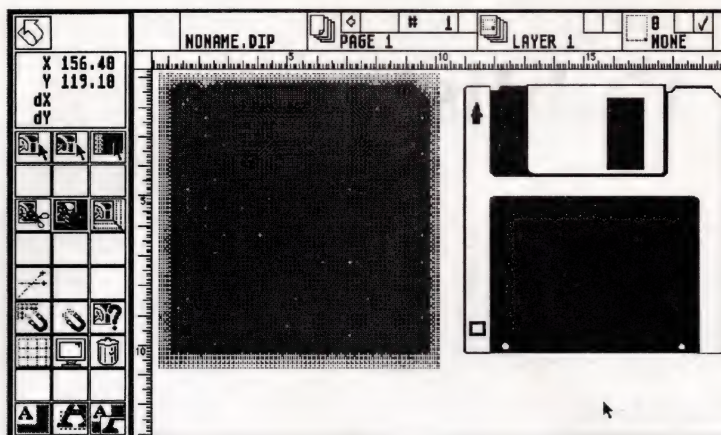
The scanner is really the key item in the DTP armoury. Don't think of it as a kind of glorified photocopier that you can simply use to read in an image that is then immediately ready to be printed out again. Almost always, scanned images will need further processing – simple tidying up, vectorisation, complex "darkroom"-type operations, photomontage – so a scanner is best thought of as a provider of raw materials rather than of finished products.

Take, for example, the next job which we shall have to tackle for our project: to give all the various printed matter emanating from the ST Club a common identity, we need a logo. Since this logo will be used at a number of various sizes, it will have to be done as a vector graphic rather than a fixed-resolution bitmap image. To emphasise the ST

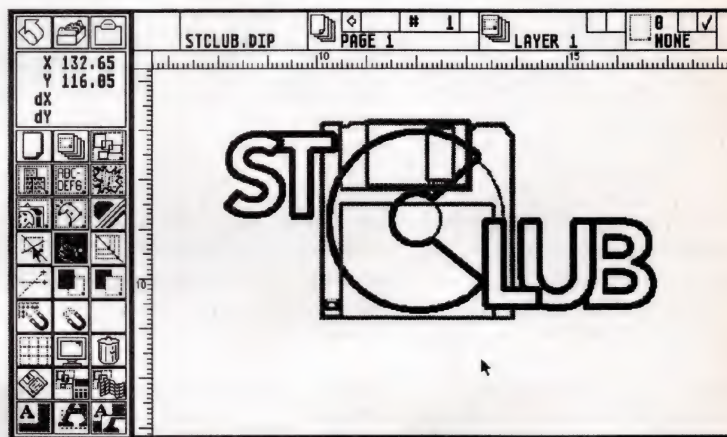


Club's origins and core business as a Public Domain library and purveyor of good-quality, cheap software, we are going to incorporate into the logo the image of a floppy disk. Now the more advanced users of vector graphics programs will undoubtedly find it a doddle to knock up the outline of a floppy by hand, but not everybody has that skill and, in any case, the example can equally be applied to more complex shapes and images. We therefore scan in a real disk, import the resulting bitmap image into a vector graphics program for auto-tracing and editing, and then add the name ST Club (see screenshots and captions). Saved in one or more vector file formats, the logo will now be available for incorporation into the business stationery, the magazine and the book at whatever size and output resolution is required.

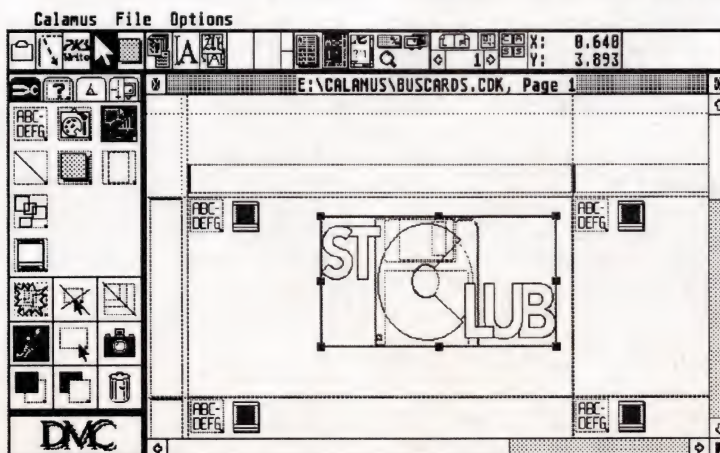
Or so the theory says... In practice, there are plenty of traps for the unwary. Just look at the screenshot of our new logo imported into Calamus S in, of all things, Calamus's own vector graphics format. An attempt to use the GEM metafile format instead gave me the right line weights, but the T from ST missing and a squashed capital C in Club. This was better, though, than Fleet Street Publisher's idea of a GEM metafile - it just can't cope at all with Bézier curves. So here we encounter for the first time one of the true headaches of Atari desktop publishing: the multitude of different graphics formats, their different implementation by various software packages, their mutual incompatibility. To become proficient at DTP with the ST, you need a detailed knowledge of all the file conversion tricks that only experience can provide. See you again next month!



The original greyscale scan of the disk (left) needed to be edited in Retouche to provide clean contours (right) and then saved as an IMG bitmap. This could then be imported into Didot Professional for automatic vectorisation. Although this intermediate stage via Retouche seems more complicated than doing a straight monochrome scan in IMG in the first place, it has the advantage that masking areas of a particular grey value (using the vector masking tool) and filling them with black or white gives a tidier image than a monochrome scan. An alternative approach would have been to import the TIFF halftone scan into DA's Vector which can vectorise particular grey value ranges, but I just cannot resist the temptation to play with Retouche whenever possible!



The finished ST Club logo. As you can see, the main design idea was to merge the disk (or rather, a cut-out section from the cleaning pad inside the disk) with the capital C. To do this, a capital C in the Avenir Black font used here was converted to a vector path and edited to fit the disk. The contrast between the heavy black outline of the text and the grey of the disk is also essential to avoid the logo becoming too cluttered and confused.



**Next month:** Converting graphics between different file formats and software applications.

Having saved the logo in, among others, Calamus vector graphics format it should now be a doddle to load it into our various projects at whatever size required. Calamus S imports it easily enough into the business cards document, but what's this? All the vector lines are of the same weight, our nice heavy outlines gone. The trials and tribulations of Atari ST desktop publishing...



# DRAWING OUTLINE FONTS

## 5. Kerning

Graham McMaster

*The most elegant typeface can be ruined by inappropriate kerning. By following a systematic approach and combining the facilities of a font editor with those within Calamus, any typeface can be correctly kerned.*

### Definition

Kerning is the art/craft of allocating white space on either side of a character in such a way that when combined with other characters to form words, the words appear as natural units rather than as sets of disjointed letters. Of course the crucial question is, what is meant by 'natural unit'. The key to answering it lies in the fact that 'I' is both a letter and a word. When it appears as a word it should not pale into insignificance and when it appears in a word it should not be dominant. These two conditions can only be satisfied simultaneously if words have the same overall blackness as the letters from which they are composed. Adding or removing letters from words should neither increase nor diminish the average blackness of the word (provided letters have been drawn with appropriate weight). When a pair of letters are too close (compared to the other letters forming the word) they create a 'black spot' to which the eye is drawn and when they are too far apart the brain has to intervene consciously to reassure us that it is not two words but a badly kerned pair of letters.

All this suggests two things. First, kerning by supplying the same amount of white space to

all letterforms - the equal spacing option - will not produce the desired result (think of the combinations 'LA' compared to 'MM' or 'rw' compared to 'dh') and second, there may exist a single, simple rule that can be applied to all characters. Its initial form might be: set the kerning boundaries such that the ratio of the area of blackness to the total area (defined by the height of a character and the distance between its kerning boundaries) is a constant. Its final form might be more complex if an allowance has to be made for the shapes of characters. Unfortunately none of the current generation of font editors provides tools that would make it easy to investigate or implement such a condition. Therefore, until quantitative criteria are established, we have to employ craft skills in setting the kerning boundaries.

### Kerning Opportunities

There are four opportunities to kern Calamus fonts: two within the editor and two within Calamus itself. Within Calamus a constant increment of kerning can be applied locally to characters that come under the influence of that text ruler. In addition, all DTP programs provide the facility manually to kern individual pairs of letters. The unit of kerning in these

instances is the same as that used to specify font size (in Calamus: point, cicero or mm) and the changes don't affect the font file: they only have currency within the document file. Within editors a global increment can be specified in the header of the font file in the same dialogue box when information about the font designer is entered. However, the main kerning tools become available when the editor is placed in that mode (Figs 1 & 2).

### Kerning Units

In editors the kerning units are different from those in Calamus and reflect the fact that within editors all sizes are relative. The units are  $1/256^{\text{th}}$  of the work area's 16,384 points, i.e. one unit of kerning is 64 editor points. It is converted to real world dimensions in the following way. When, within Calamus, a specific font size is selected e.g. 12-point, the distance from the top line (usually set above the ascender line) to the bottom line (usually set below the descender line) is set equivalent to 12pt and the characters are then scaled in proportion to that figure. If no additional leading is specified, the line spacing will also be 12pt.

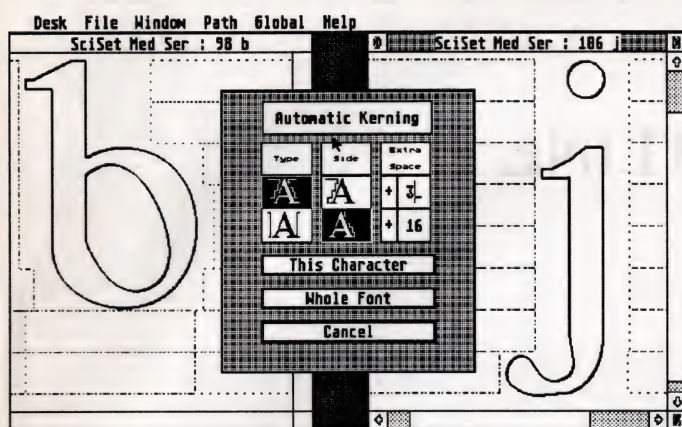
As an example, DMC Times 100 has the dimensions: top line to bottom line, 12,928;

ascender to descender, 12,096; and base line to ascender, 9,856. If it is selected at 12pt then 12,928 editor points are set equivalent to 12pt and the ascender to descender distance is then 11.2pt, giving a built-in leading of 0.8pt. Upper case letters will print 9.1pt high and one unit of kerning (64 editor points) will be 0.06pt. (I am grateful to Matthew Carey - the author of Fonty - who sent me some large scale printouts of upper case letters which provided an essential clue to working out the above conversion.)

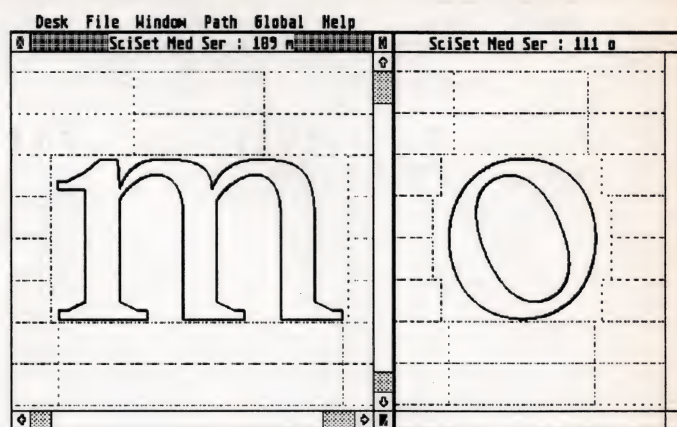
### Leading

The interesting finding is the inclusion of some intrinsic leading. Similar conversions can be calculated for most Calamus fonts with the exception of those drawn by Compugraphics. If you load their fonts into Fonty, the guide-line values displayed in the corresponding dialogue box are not those used when the characters were drawn (presumably this is part of their protection mechanism). However you can still find out how much leading, if any, is included in the typeface. Within Calamus, set the font size to something like 100 mm. If you are using relative line spacing, set the leading to zero or, for absolute line spacing, set it to the font size i.e.





△ Fig 1. If the kerning boundaries above a letter are overlapped by a constant amount it creates the condition to provide a set of accents to supplement the standard Atari set.



△ Fig 2. Fonty allows each side of a character to be kerned in different modes and by different amounts.

100 mm. Type some letters with descenders and on the line below type some with ascenders. If the typeface contains intrinsic leading there will be a gap between ascenders and descenders; otherwise they will touch. What I found is that some do and some don't. Compugraphics Garamond, for example, contains no leading but their Souvenir face does.

It makes sense when working with metal type to include some lead in the typeface to ensure that when text is set solid (i.e. without leading), ascenders and descenders don't crash into each other. However, given the ease with which line spacing can be adjusted in a DTP program, there no longer seems to be a need for such a strategy. Moreover, since no indication is given to the user of how much lead has been included, finding out requires a font editor and the calculation indicated above. It therefore seems logical to standardize the definition of font size to be the distance from ascender to descender.

### Kerning Modes

Vector font editors provide rather more kerning facilities than are normally found in bit-mapped editors. The region between the top line and the bottom line is divided into two

sets of eight rectangular segments: one set to the left of the centre line, the other to the right. There are two basic modes of automatic kerning: parallel kerning in which each set of segments moves as one to form vertical, parallel boundaries at user specified distances from the left and right extremities of a character; and contour kerning in which each segment is set at a specified distance from the part of the character opposite it. In this latter mode the kerning boundaries cross over above and below the character in such a way that the right hand boundary lines up with the character's left hand extremity and the left hand boundary lines up with the right hand extremity (Fig 1).

### Kerning Tips

Although some characters have their own unique kerning requirements (e.g. f, j, r and t), many can be collected into groups with similar requirements. The letters 'o' and 'm', both lower and upper case, can serve as models to kern many other letters. 'M' typifies letters with one or more vertical sides (e.g. 'h', 'b') while 'o' represents those with at least one curved outline (e.g. 'e', 'b'). As a general guiding principle, a pair of 'o's can be closer together than a pair of 'm's while still

appearing to have the 'correct' amount of white space around them. The numbers, punctuation and the set A, T, V, W, X, Y, v, w, x, y form additional groups that can be treated similarly. In the case of numbers, I prefer to draw them all of the same width (except '1', of course) and to kern them equally in order to improve the appearance of tables of numbers and tables of contents.

With a serif face, kerning is easier if the width of horizontal serifs is designed as a multiple of 64 editor points i.e. an integer number of kerning units. (My *Authors' and Printers' Dictionary* defines a kern to be any part of a letterform that projects beyond the body and in that respect a kern and a horizontal serif are the same.) An initial kerning of the typeface (and one which particularly suits the m-letters which are the largest group), is then obtained by selecting parallel mode, specifying 1-2 units and performing an automatic global operation. For a sans serif face, set the initial kerning to what the width of serifs would be if they were present (10-16 units). These initial values are not critical: they merely start the process.

Within Calamus create text macros to test each of the groups of characters. The most

important macro is used last. In it every letter appears before and after every other letter. Normally that would involve three letter words but some indication of texture can be obtained if some of the combinations are run together to form six and nine letter sequences. Punctuation can also be included. If you simply create a text file and reload it after changing the kerning on some letters (in the editor), Calamus will not see these changes: calling a macro forces the file to be rebuilt.

Having performed an initial kern on the typeface, the first visit to Calamus concentrates solely on the m-letters. Call the relevant macro several times and adjust the kerning on each via Calamus text rulers. Select the optimum setting from a visual inspection of the printed output. Adjustments made within Calamus will be in the units you specify and need to be converted to editor units. On returning to the editor to implement these changes, an initial kerning on the o-letters can be set to half that found for the m-letters. For a serif face remember to include the width of serifs in the calculation. This interaction between Calamus and the editor is repeated for each group of letters.



# Grafix Arts

Paul Keller

## TECHNIQUE – Animation

**T**he ST is a great machine for creating colourful artwork and with a large range of art packages which have been produced for it in the past, it is also very versatile. In fact with so many of these packages pointing to the interest in ST art it is hard to ignore the ST's graphical capabilities. As well as many computer art packages available there are also many animation packages, some of which we will briefly look at.

Admittedly, there are other computers around which have much better graphics capabilities than our humble ST, such as the Falcon. But these other machines tend to cost a lot more than the ST, and if you have to start somewhere in computer art the ST is still a good choice even if a little dated by today's graphical standards.

There are three main types of animation available and these are (1) Colour cycling, (2) Cell animation, and (3) 3D Modelling.

It is a case of horses for courses when choosing which animation package and type of animation needed. To help you decide we look at the three common types of animation available.

### (1) Colour cycling

This is the shifting of a colour palette range from left to right or right to left one colour at a time in cyclic formation. Its uses are varied but it is best for showing any movement flow such as that found in liquids like water. As a basic animation tool the colour cycle technique is both quick and easy, especially for the beginner who is new to animation.

It can be used to give the illusion of movement by masking an object to the background.

An example would be a palette cycle of eight colours, one of these being red and the rest coloured the same as the background but taking up 7 slots of the same background colour. Now if in our example illustration we wished an arrow to move from one side of the screen to the other we do the following:

First making sure the red is the first colour in the cycle palette, then with a left to right movement cycle flow, eight frames relating to the eight colours of our cycle

group need to be placed across the screen. These eight arrows would then correspond to the eight colours of our cycle palette in order of movement flow.

When the cycle is switched on all colours are shifted through the arrows but you can only see the red colour moving, and hence the illusion of movement.

Most art packages have colour cycling in them as standard, with Degas Elite being perhaps the best, with up to four colour cycle palettes at one time in any direction flow.

### (2) Cell animation

Cell animation is a frame by frame approach to movement and such packages as Cyberpaint have this ability. Cyberpaint is probably the best of a bunch of art packages having this facility without the need for an understanding in any programming language.

Cell animation can be used for the creation of cartoons, animated storyboards, home grown movies or any flat picture screen movements. Most games are of the cell animation type movement because it is often quicker to use flat screen images for movement as opposed to the 3D type. Also with 2D cell animation more detail can be put into your pictures more easily than that created with 3D Modelling, at least this is true with the ST. With more expensive and sophisticated computers it should be possible to generate just as detailed 3D images, although a slower speed may still be a drawback in execution.

With Cyberpaint as with most animated packages the more memory you have in your machine the more complex and longer you can make your animations.

If you want more speed in your animations a blitter such as in the STE may provide this. Another option is a 16MHz processor chip as opposed to the standard 8MHz but this costs upwards of £100, although it does provide you with nearly twice the speed of the normal central processing chip, the MC68000.

Cyberpaint is one of the best art and animation packages because of its versatility. This is reflected in the fact that it is both a paint and animation package rolled into one.

Also with Cyberpaint you can combine 3D images and animations created from Cyberstudio or Cyber Control for extra effect and sophistication.

### (3) 3D modelling

It is a good idea to start with a storyboard for any animations you may be creating, as this makes for easier planning. It is a particularly important aspect of any animation in whatever form it may take, i.e. colour cycling, 2D or 3D animation.

When working with any 16 colour 3D modelling package it is best to carefully choose your colour palette as the colours can very quickly be used up in shading. Choice of a colour palette is not so critical for modelling programmes displaying more than the standard 16 colours at a time. Choice of colour does add to the general effect you may wish to portray, for example red on blue stands out particularly well.

When viewing your models in movement it is always best to first select wire frame as this will give a faster update. A wire frame view works quicker than the finished rendering and so any mistakes or fine tuning can be carried out before the longer process involved with the final stage in rendering.

A good 3D animation package for the beginner is Cyber Studio and as mentioned it can be used with Cyber paint. This makes it possible to combine both speed and detail with use of the two programmes. If you are using Cyber Studio another good package to have is Cyber Control, which gives you an even greater range of effects and tools than Cyber Studio offers on its own. To buy the three disks is normally quite expensive, but if you want to try them out first you could obtain issues 8, 9 and 10 of ATARI ST REVIEW. All three packages were given away with those issues.

One of the other options for animation is using a control language, such as STOS basic. STOS is a good control language as it has 3D capabilities available as found in the package STOS 3D; it is also very user friendly and as such good for the beginner.





# FALCON

## APPLICATIONS

### *Morphing On Your Falcon*

A revolutionary new art/animation/morphing package is currently under development by Floppyshop. It comes from Douglas Little of Black Scorpion Software, author of the highly successful Shareware program PhotoChrome. The program is called Chroma 24 and will be available around the end of the year with a price tag of under £100. It runs in 256-colour and True Colour modes and supports most of the graphic formats available on the ST, Amiga and PC. It encompasses the best features of similar packages on various computers, but implements them in a completely different manner from those packages. A number of new features unique to Chroma 24 are also implemented, with the emphasis being on ease of use. It is very fast, being written in 68030 assembler, and very memory-efficient.

Chroma 24 is frame-based and, in addition to all the standard features you'd expect from such a package, extras include the ability to set canvas sizes larger than the physical screen area in order to handle graphics in the actual resolution used by the ST, TT, Falcon, Amiga and PC as well as the Next, Sun and Hewlett Packard Workstations. Graphics larger than the selected canvas size are professionally scaled to fit, and those smaller may be positioned anywhere within the work area to allow multiple animations on screen at once. Animations may be loaded above or below other animations to give one animation running within another concurrently. 3D texture mapping is implemented along with controlled distortions, which can be performed on broadcast quality graphics. You can even change resolution at any time from within the program without quitting to the Desktop. Internal compression allows much larger animations to fit into memory than should be possible.

The icing on the cake has to be a complete morphing studio which is integrated into the main package. It utilises a technique known as field warping and allows the user full control over the morphing process. This has been written

utilising the DSP56001 using custom written floating point routines for increased speed and accuracy. A typical 320x200 True Colour frame takes anything from a few seconds to a few minutes to render, depending on complexity. I'll be able to give you more information on the product nearer to the release date.

### *Musicians' Club Launched*

Falcon Information eXchange (FIX) is a new user group for Falcon owners. It is run by Computing For Music, a London based music technology consultancy. They specialise in music on the Falcon and produce a regular disk magazine with news, views, reviews, interviews, letters and questions and answers. They also promise regularly updated lists of music packages for the Falcon. PD and Shareware software will also be offered to members as it becomes available. Subscription to FIX costs £20 per annum and cheques should be made payable to Computing For Music. Contact *Computing For Music*, 11 Ferrestone Road, Hornsey, London N8 7BX; Tel: 081 340 1871.

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## Falcon News

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### *More Memory?*

FalconWING is a new memory upgrade board from System Solutions. It allows you to upgrade to 4 Meg or 14 Meg by replacing the original memory board fitted inside your Falcon. It is easy to fit and does not require soldering or any modification to the Falcon's case or metal shielding. This allows authorised Atari dealers to perform the upgrade without invalidating Atari's guarantee. FalconWING costs £59.95 for the unpopulated board, £269.00 populated to 4 Meg and £799.00 populated to 16 Meg (14 Meg usable). For more details con-

tact System Solutions, Windsor Business Centre, Vansittart Road, Windsor SL4 1SE; Tel: 0753 832212; Fax: 0753 830344.

### *Real Time True Colour Digitising*

Exposé is professional true colour digitiser from Titan Designs. It can capture 16-bit true colour images at up to 25 frames per second. The supplied software allows the resulting images to be displayed at a resolution of 512x512 without the use of interlace. Exposé is fully compatible with Fresco, Titan's forthcoming genlock device.

Exposé allows pictures to be scaled and displayed within other pictures. It also supports most of the industry-standard file formats (including compressed ones), so that captured images may be retouched in any of the available art packages or imported into Calamus or Didot Professional for pre-press work. Exposé will be ready in October or November and is expected to cost £351.33. Fresco is expected shortly afterwards and will retail at the same price. I should stress that the price of both products is provisional at the moment. Contact *Titan Designs Ltd*, 6 Witherford Way, Selly Oak, Birmingham B29 4AX; Tel/Fax: 021 414 1630.





# Food for Falcon Programmers

*One of the traditional complaints of the ST programmer has been the lack of official technical documentation from Atari. When the DocSupport packages were released two years ago, things looked to have taken a turn for the better. Jon Ellis has been looking at the latest addition to the series; official documentation for programming the Falcon.*

## Introduction

When the Falcon documentation package was announced on CIX in May, I must confess that I was surprised. Considering that it took Atari about 4 years to make ST technical documentation available to the ordinary programmer, this seemed too good to be true. Well it is true, and it's also extremely good!

The DocSupport VI package consists of 60 double-sided sheets of A4 paper comb-bound with an acetate cover to match the other 5 DocSupport manuals; and a 720K disk containing the software part of the package.

## Documentation

The earlier manuals in the DocSupport series were criticised for their uneven presentation. Atari have finally got their act together on this front: the text is clear and laid out in a tidy fashion. Even better, on the whole, the writing style is precise and dense, with few wasted words. However, there are occasional lapses into the content-free phrases favoured by marketing men. For example, as part of a discussion on user interfaces, we are urged to ...provide the user with the richest computing experience possible.

Thankfully, the rest of the manual is devoted to helping us provide the user with software that works.

The first section is devoted to guidelines on programming GEM applications. This includes general advice on the shape of the user interface such as the layout of the menu bar, keyboard short-cuts, when to use dialogue boxes, and so on. Atari have been talking about this kind of thing for a while

now, and it is useful to have their thoughts collected into a coherent essay. There is also some advice on writing games software, although this is all of the common-sense variety, such as 'make it run from hard disks'.

Although this section is entitled 'MultiTOS User Interface Guidelines', the thrust of the text is towards making programs MultiTOS-friendly, rather than describing how to exploit the new facilities offered by MultiTOS. Presumably this information is going to be supplied with the MultiTOS software (or as a DocSupport VII?).

The second section of the manual is concerned with new AES functions incorporated in the version of GEM in the Falcon ROMs. These functions provide operating system support for pop-up menus (Figure 1a) and

submenus (Figure 1b). These Mac-like interface elements have been used in some normal ST software (eg, the Lattice C integrated compiler), but all the work has had to be done by the programmer. Each of the new AES functions involved in implementing these new menu types is described in detail, with sufficient depth to enable bindings to be written for C and other languages.

The heart of the manual is a detailed technical discussion of the Falcon hardware. The material ranges from general-interest information such as the pin-outs for the various Falcon-specific ports to very specialist data for those wishing to design hardware for the internal expansion port. Full details are also provided on the differences between the Falcon and earlier machines in the implementation of standard ports such as the parallel printer interface and the RS232 port.

For many users the major attraction of the Falcon lies in the facilities offered for sound and video processing. The documentation caters excellently for those interested in these areas. At the hardware level, there are full descriptions of the various Falcon video modes, and the signals that are available at the video port. The sound system is the subject of a highly detailed discussion which covers the individual components (DSP, DMA sound, Codec), and, more importantly, how they talk to each other. Hardware details of the microphone and headphone ports are also provided, down to the level of circuit diagrams.

Moving on from the hardware, the next chapter describes the

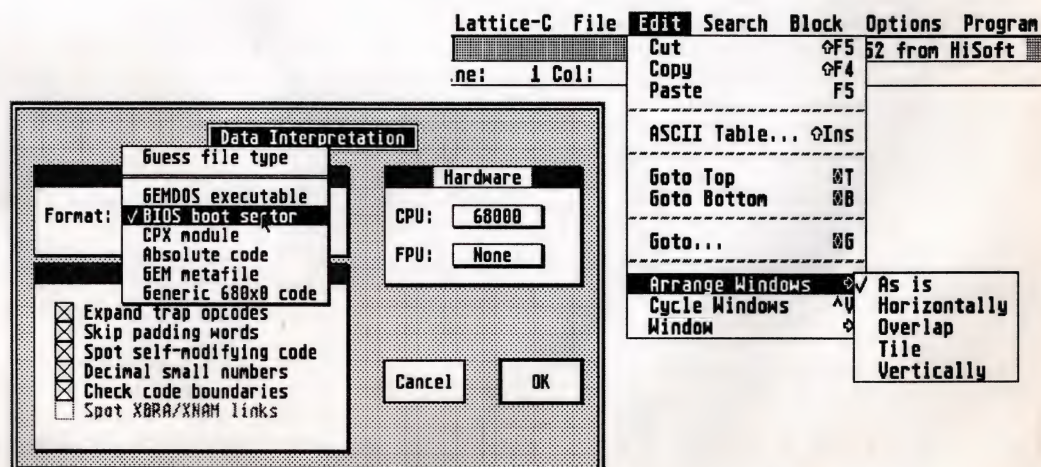
operating system functions that allow software to control the chips. A whole range of new Falcon-specific XBIOS calls are listed, covering video, sound, and the interface to the DSP chip. There are no details of the low-level memory-mapped interface to these systems, as the official line is that they should only be accessed via the operating system traps. This 'virtualisation' of the hardware is good in that it allows Atari to change the chips on future machines without breaking applications. However, it does rely on the provision of a comprehensive and efficient suite of interface functions to convince programmers that direct access is unnecessary. Judging from the number and scope of the new functions, Atari have tried hard to meet this requirement.

The final section of the manual provides some documentation for the DSP programming tools that are provided on the accompanying disk.

## Software

The DocSupport VI disk contains a large self-extracting archive and a README file of instructions on how to unpack it. The archive expands into two folders, one containing the DSP assembler package, and another containing the DSP debugger. Between them, these folders occupy about 1.8 megabytes of disk space, so it's probably best to unpack the archive on a relatively empty hard disk partition.

The DSP\_ASM folder contains two tools for writing DSP code. Both the DSP assembler and linker are ports of programs written



△ Figure 1: Advanced menu features in use. a) This example from the Lattice C editor shows a sub-menu associated with the 'Arrange Windows' menu item. The right-arrow in the menu item indicates that it has a sub-menu attached. b) A pop-up menu in action from the RenderST disassembler package. Similar features are built into the AES in FalconTOS (v4.x), whereas they have been implemented by the programmers of these packages.



by Motorola, and so do not use the GEM interface at all. This is command-line software at its least sophisticated, but at least the various incantations required to make it work are documented in the DSP Tools chapter of the printed manual and also briefly in a README file on disk. The assembler and linker are painfully slow, particularly if the assembler is allowed to write a listing file to the screen (the default behaviour). In addition to these tools, the folder also contains two other smaller utility programs.

Contrasting with the crudeness of the assembler, the DSP debugger (written by the French software house Brainstorm) is a very slick piece of software. It not only uses the full GEM interface, but also adds extras such as real-time quick help (Figure 2) and non-modal dialogue boxes (Figure 3). The debugger offers all the features that might be expected, such as single-stepping, breakpoints, source-code and memory windows; together with an interface designed to make debugging programs easy.

The only snag with the debug-

ger is the printed documentation. There isn't any. There is a README file, but this is a list of changes made in the most recent version of the program. To further complicate matters, this file has obviously been translated into English, as evidenced by the occasional strange turn of phrase. However, this deficiency is largely made up for by an outrageously comprehensive on-line help system (Figure 4) which not only covers the operation of the debugger, but also contains about 500K of advice on the DSP assembly language. Many of these help files appear to have been directly lifted from original Motorola material, in that they still bear Motorola copyright statements! However, I am sure that Atari have secured Motorola's permission to distribute these files. The only problem with this help system is that I could not persuade it to work from within the program - I had to read the files manually from the Desktop.

Despite the amount of help available on-line, budding DSP hackers will probably find it useful to obtain the official Motorola

documentation on programming the DSP chip. This is available from their European Literature Centre in Milton Keynes (DSP56000/DSP56001 Digital Signal Processor User's Manual; product code DSP56000UM/AD; price £19.17 including UK delivery). The debugger folder also includes example DSP programs and utility programs that enable DSP code to be converted into various formats, including a form suitable for embedding in applications. Also within the debugger package are a couple of folders containing source code and header files for C bindings to the DSP XBIOS functions.

## Conclusions

It should be noted that the documentation is not a programming tutorial, in that it does not contain examples of what can be done with the Falcon, but a description of how to access the facilities. Also, there are no concessions to beginners - the accent is very much on the provision of high-quality information to the technically-aware.

Atari are to be congratulated

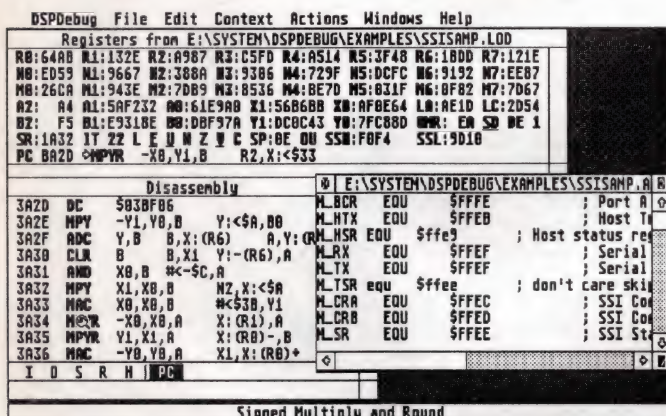
for this package. They have finally produced informative and well-presented technical documentation, together with essential development software, and released it at a keen price. What is more important, the package is available now, just when Falcons are becoming more widely available. If you are seriously interested in exploiting the new features of the Falcon, then DocSupport VI is a must. The software alone would be worth the cost of the package. Unreservedly recommended.

## Points For:

- ✓ The official word on programming the Falcon
- ✓ Timely release of detailed information
- ✓ Good Falcon development software
- ✓ Much better presentation than earlier DocSupport volumes

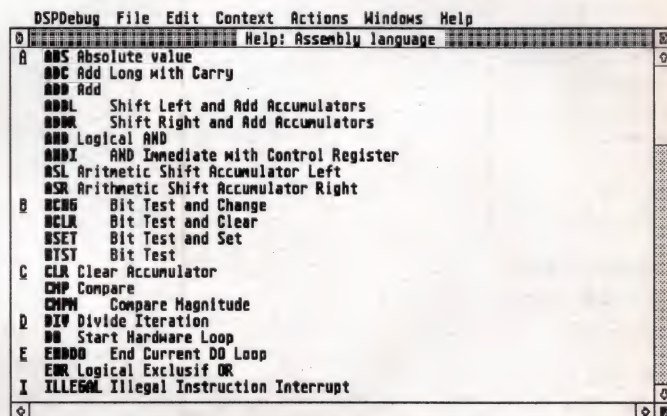
## Points Against (minor):

- ✗ No printed documentation for DSP Debugger
- ✗ Problems with DSP Debugger online help
- ✗ No example code to show how Falcon features can be used in real programs



△ Figure 2: The real-time quick help system of the DSP debugger. As the mouse pointer is moved over certain elements on the screen (windows, menu items, and some printed data in window), it changes to a magnifying glass, and a one-line description is printed at the bottom of the screen. In this case, the pointer is over a DSP opcode in the disassembly window, and an explanation of the instruction is displayed.

▽ Figure 4: The comprehensive on-line help system provided by the DSP debugger. Help files cover operation of the debugger, as well as extensive details on programming the DSP chip.



△ Figure 3: The DSP debugger utilises non-modal dialogue boxes which are actually windows. These allow better compatibility with MultiTOS, as well as being movable.

Product:..... DocSupport VI - Falcon030 Developer Documentation  
(Atari part number SSW 1201 008)  
Version:..... Document dated 1st February 1993  
DSP Assembler..... v4.1.1  
DSP Linker..... v4.1.3  
DSP Debugger..... v1.05 (6th April 1993)  
Supplier:..... Atari Corp UK Ltd., Railway Terrace, Slough, Berkshire  
SL2 5BZ  
Price:..... £49.99 (including VAT and UK delivery, correct at time  
of writing: July 1993)  
System required:.. Software will run on ST with hard disk, but to make  
meaningful use of the DSP 56000/1 debugger, a Falcon is needed.  
Manifest:..... Documentation: Comb-bound A4 manual; 120 pages;  
Programming Guidelines; Hardware Reference Guide; XBIOS functions for  
sound, video and DSP; DSP programming tools.  
Disk:..... 720K disk containing DSP assembler, linker, debugger  
and support files packed as a self-extracting archive.



# SPEEDING FINE

*I've been waiting for this since I got the Falcon: the technical equivalent of go-faster stripes, but ones that actually do make the machine go faster. Some of you will already be familiar with NVDI, a software accelerator which has been around on the ST for some time. It's now been updated to cope with the Falcon and SpeedoGDOS and is currently HERE, not on its way or due out soon.*

## On the Bench

Both of you who read my Falcon review will know that I did some benchmark tests on it using NBM and Quick Index to see how much faster my new machine was compared to my ST, and was rather startled to find that the improvement was excellent for CPU functions, but minimal when it came to actually producing some output, and that it actually fell behind when compared to an ST running Warp 9 (available from the ST Club at an unbelievably low price - get one today), another fine example of Atari's marvellous attention to detail.

Now NVDI is here. Can it do for the Falcon what Warp 9 did for my ST? Time to haul the benchmarks out of the vault again.

## The Ruling Classes

First of all, laying the ground rules. For comparisons with the ST, all tests are done on a mono monitor. Yes, I could have shown how they act in low and medium res, but that would just be dull and would cost the Editor more. Take it that the same sort of results hold in all ST resolutions. Speed changes as more colours and more area are added to the Falcon, so an overscan screen in True Colour is substantially slower than a two-colour low-res screen. No, I won't be including all that either. (Y'know, I could have made a fortune on this review. Maybe even indulged in some luxuries. Like a Big Mac. Wow.) And finally, for the tests, there's nothing else in the Auto folder, no accessories, no background programs, no nut'in. Except once. But I'll get around to that later.

## Slipping it in

The package consists of a disc and a manual. If you've already had contact with NVDI, you'll know what to expect of the manual: it seems to be written by programmers for programmers. If that's the way you think, it'll probably all seem clear and obvious to you. Call me up and explain it to me sometime.

The package I received had only just

fallen off the back of a ferry, so there hadn't been enough time to update it to cater for the Falcon specific features. There was some up-to-date information on file on the disc, but unfortunately it was written very much for programmers (i.e. I couldn't understand it) and there was a file which covered the enhancer program, but that was in German (i.e. I couldn't understand it). Not my day, really.

The basics of it were simple enough for me to understand, though. There's an Install program, you run it, it's installed. When you do copy in the enhancer program, make sure it sits behind SpeedoGDOS in the Auto folder, otherwise nasty things happen and your children will turn into cookies. Okay, so I didn't understand ALL the German, but I did work out where to put the enhancer. I think.

## Don't just sit there, DO something

So it's in there, installed. What does it do?

The basic answer to that is "It gets ignored". First of all, you'll notice the difference, but, as with all the go-faster programs, you get used to it very quickly and don't want to be reminded that it's there by having other programs complaining and falling over. So far, there are very few Falcon specific programs around, so there's no real test for its reliability, there's only its pedigree to think of. I don't remember any storm of complaint about the ST version, and it's been around for a while. I doubt that the company will suddenly go all out for a "destroy everything" campaign, so I think it's reasonably safe to assume that it'll work fine with properly behaved programs. If not, press both shift keys when you boot up and NVDI won't bother loading.

## Testing, testing.

Yes, but what does it do?

All right, all right. The tests. Take a look at Figure 1. It's all there. Well, most of it, anyway. You can see that NVDI

lifts the Falcon up to at least where the Falcon should have started, nearly doubling the ST speed at worst, lifting it to almost twelve times the speed at best. As when you first install any accelerator, you notice how the windows open and close faster, how the text scrolls past quicker, how much bluer the sky is. It works. Compare it to the ST running at Warp 9, and it's still an improvement (except for the Quick Index TOS string test), though the difference is not quite as impressive. Admittedly, Quick Index tests were designed with Warp 9 (née Quick ST) in mind, so there may be a small amount of bias in what's being tested.

So, there it is. It goes faster, is temporarily a pleasure, then quickly becomes standard. The whole package is designed with programmers in mind, so there may be many more features and tweaks available, but I don't know what they are. Pack up software, exit stage left.

## Except ...

Something strange happened on the way to the "Return to Sender" envelope. I started putting the Auto programs back into the folder, and re-booted. One of the programs is Screenblaster from Compo (review soon), and I suddenly decided I needed to do another speed test. I rebooted and started the testing, and noticed that, on one of the tests, the figures had gone up, even though I was in 640 x 480 mode, higher than the standard Falcon mono screen. I investigated further, taking

Screenblaster out, and found the figure went down again. I booted with Screenblaster, but pressed the UNDO key to disable it. Text speed went back up, even higher. I was used to the tests shifting a few percentage points after each boot up, but this was weird.

Now, the people who wrote NVDI have a close and intimate relationship with those who wrote Screenblaster, and it appears that their endearing intimacy has left us with a legacy whereby some things are actually improved by having the programs sitting in the same folder together. Anyway, take a look at Figure 2; it'll give you the figures.

## The Final Whistle

So, the basic advice is this: if you've got a Falcon, you'll need some go-faster software. At the moment, this is all that's on the market, and it seems to work fine, so it definitely gains a "Best Buy" token, but if you're not a programmer, you may have some trouble understanding all the features you're missing out on. Final score: Program 8, Manual 3.

Product:.....NVDI Version 2.5  
Price:.....£49.95  
Supplier:.....System Solutions  
The Desktop Centre  
17-19 Blackwater St  
East Dulwich  
SE22 8RS  
Tel:.....081 693 1919

## Benchmarks

Figure 1

	Falcon	ST	ST (Warp 9)	Falcon (NVDI)
<b>NBM v1.2</b>				
Dialog box draw	332	212	294	622
Graphics	142	67	106	797
<b>Quick Index v2.2</b>				
TOS text	157	110	319	487
TOS string	158	106	1394	261
TOS scroll	211	132	135	239
GEM dialog	193	133	497	601

Figure 2

	Falcon	Falcon (NVDI)	Falcon(NVDI + Screenblaster (UNDO)
<b>NBM v1.2</b>			
Dialog box draw	332	622	620
Graphics	142	797	806
<b>Quick Index v2.2</b>			
TOS text	157	487	549
TOS string	158	262	261
TOS scroll	211	239	240
GEM dialog	193	601	597



# Falcon Forum

All readers' letters that deal exclusively with Falcon-related matters are now printed on these pages. The layout is similar to the standard Forum pages - see p.39 for key.

## Falcon030 Compatibility

Hartley Patterson - FF STA 33  
Colin Fisher-McAllum - FF STA 33

**I** It is important to understand that, contrary to popular assumption and marketing hype, the Falcon is not really ST compatible. It is merely similar. Although the similarity seems close with an Atari ST monitor attached, the illusion is soon shattered when used with an SVGA or multisync colour monitor for which the Falcon is really intended. Adding ScreenBlaster further compounds the problems, as a lot of programmers do not understand how to write software for varying screen sizes and resolutions.

It is unrealistic to contemplate using a 1Mb machine, and even 4Mb soon becomes limiting when all the patches, extras and a RAM disk are installed. 6 or 8Mb would be about right for now. It is also unrealistic not to have NVDI 2.5 and FPATCH2. (FPATCH1 does not work and should be deleted.) Atari claim that "well written" ST software will run if it adheres to the "rules", but neglect to point out that they have never properly explained what the rules are and then they've changed them anyway. If well written professional software such as Calamus, Tempus and Pure C get caught out what hope is there for the rest? Often, if an ST program runs successfully it means that it was just lucky not to be using one of the many changed hardware or software features rather than it having been "well written". Just because a program loads and the menus appear to function does not mean that all the program "works" as some published articles have indicated.

Advanced applications, such as Tempus and Pure C, have problems because they incorporated sophisticated features such as running another program using p\_exec (which Atari has never properly documented). While the rest of the program is fault free, as soon as a certain feature is invoked it will create a dangerous state. In this case the program will bomb on quitting, but this may not be immediately associated with the real cause.

Most run-of-the-mill software makes simple assumptions that are no longer valid. A common one is to assume that if the screen width is not 640 pixels then it must be in low or medium ST resolution. This is not even true for

an ST! Other sticking points are encountering an HD disk drive or changed Modem port hardware. In these cases there is a high probability that the distributor has gone bust and/or the author has changed address, so a quite useful application is rendered obsolete for the sake of the odd byte change. This enforces the need for responsible education of all programmers, amateur and professional alike, and informed discussion in magazines.

The only program that I would personally rate as being very well written is Interface. If only more applications followed this example. The box overleaf contains a list of some ST software with notes on Falcon compatibility.

Despite a few problems the Falcon is a good value machine and will probably become mature in a year or so. It annoys me intensely to see journalists who can barely distinguish different parts of their own anatomy, let alone a computer's, discussing the case design, the next model and Atari's marketing strategy. The only thing wrong with the case is the clearance for the audio jacks. It would be nice if the keys had the action of the original Mega keyboard and the diagonal function keys got lost forever, but the software problems indicated above need serious attention and fixing before they are propagated throughout a product range (like the ST). If a faultfree TOS ever becomes a reality then a separate keyboard and neat case which has all the connectors on the rear and is easily adaptable to 19" rack mounting would be worth considering. Styling is only skin deep, fault-free efficient software is fundamental.

Graham Hinton

**I** Silhouette does work perfectly on a Falcon. I'm sorry if the information I gave in STA 30 has caused any problems for anyone; I think I had an auto program causing problems with the auto-tracing function. Silhouette also works very well with SpeedoGDOS (which I can recommend to everyone, it is fast!).

GST apparently have no plans to make Timeworks DTP 2 compatible with the Falcon! Perhaps a company such as Hisoft should take it off their hands. It already has large user base and people like Hisoft could really make it into a superb package.

Phil Hodgkins

## Falcon Feedback

Piper - ECTS Report STA 23  
John Watkins - Forum STA 24  
Britt Johnstone - Forum STA 24  
Alistair Bodin - Forum STA 25  
John Watkins - Forum STA 25  
Phil Hodgkins - Forum STA 30  
Alan Chin - Forum STA 30  
Harry Payne - Forum STA 31  
Peter Robbins - Forum STA 31  
David Haider - Forum STA 32

**A** True colour mode on the Falcon has no palette. All modes of 256 colours or fewer address the screen by holding colour registers for each colour. These registers pick their red, green, and blue values from a Palette (on the Falcon this is 18 bit/262144 colours, on the Crazy Dots card it is 24 bit/16777216 colours). This means that in a 256-colour mode you pick out 256 colours from 262,144 and put them in registers; they could all be blue or all green, etc., you choose. Software chooses which colour to put at any one pixel by putting a number from 0-255 at that screen position. This number matches a register and you have your colour on the screen.

In True colour mode, however, each pixel can have 0-32767 combinations, a big leap from 0-255 and so instead of having 32,768 registers, which would be ridiculous, the screen makes up its colours itself. In the first 5 bits of the number 32,768, Red is represented, then Green in the next 5 and finally blue in the last 5. So when you address the screen with a number, that number holds the red, green and blue values inside it, and the pixel becomes that colour. The one drawback is that now you don't have as many different shades of colour to pick from as you did in 256-colour mode, but now you can display all of them at once. And for those of you who are wondering why it's 32,768 and not 65,536 colours in True Colour mode, it is because there are two True Colour modes on the Falcon, and I am describing the 15-bit VDI compatible mode. The 65,536-colour mode on the Falcon is not VDI friendly but follows the same method as above. This rule applies to every other computer (accept the Amiga which cludges its high colour modes) which can handle more than 256 colours. Here is a run down of the modes and available colours.

### Atari Falcon 030

Mode	Colours	Available Colours
2	2	262,144
4	4	262,144
16	16	262,144
256	256	262,144
True (VDI)	32,768	32,768
True 16-bit	65,536	65,536



## Crazy Dots

Mode	Colours	Available Colours
2	2	16,777,216
16	16	16,777,216
256	256	16,777,216
15-Bit	32,768	32,768
24-Bit	16,777,216	16,777,216

Tut Tut to the STA Forum editor who replied to this question "True Colour mode on the Falcon is limited to displaying up to 65,536 colours selected from 262,144 colours"

Rob Perry

## General CPX

**I** The first version of the General CPX supplied with the Falcon only lets you switch the Speaker on/off. You could not turn off the Blitter or the Cache. I got round this by using my TT version of the CPX and it worked. If you can't get that version, try buying NVDI 2.5. That comes with a CPX that lets you switch everything on/off - it even lets you switch the CPU to 8 Mhz. And you get a nice screen accelerator in with the bargain.

Let me just add a few notes. Anyone wanting to use the PD utility that lets you configure your bootup resolution (NVM\_CONF.PRG). Be very careful! If you set it to boot on UNIX then you will be frozen out from your computer (unless you have UNIX connected of course). If you find that nothing boots and/or you have a screen mode that doesn't work, the only thing you can do about it is to set up a boot sector on a floppy which resets the Non-Volatile Memory to UK standard. I have written a program which installs this boot sector onto a floppy disk, and have put it in the PD as well as giving it to Alistair Bodin at Atari. It is called REVIVE.PRG. Remember though you have to run the program on a working Atari to install the bootsector. It would be a good idea to have a disk with the bootsector written to it just in case some git writes a virus to corrupt your NVM.

I would like to use this opportunity to thank Daryl Still at Atari for donating to me (free of charge) an Atari Laserbrain interface for my SLM804. It was a bit grubby but I cleaned it up «Grin».

If you would like a copy of my REVIVE program then send a stamped addressed Jiffy-bag to me at 35 Hugin Avenue, St. Peters, Broadstairs, Kent CT10 3HP. Please include a formatted disk, preferably with some interesting PD on it.

Rob Perry

## Easydraw 3

**Q** Are Easydraw 3 and Easy Tools 3 compatible with the Falcon? Does Easydraw 3 have more than 5 slots in its menu for fonts? Easydraw 2 works with SpeedoGDOS (on the Falcon), but only the first five fonts are selectable as there are only 5 slots in Easydraw 2's drop down menu from which fonts can be selected. This means that you have to con-

## ST Software and Falcon Compatibility

### Programs that seem OK (all resolutions):

INTERFACE 2.21	Will convert colour icons.
DSPDEBUG 1.06	
DEVPAC3	
COMMAND	German command line interpreter.
NVDI 2.5	
D. Fiebelkorn CPXs	Cookies, System Info, File Info.
SHREDDER 3.0	
LGSELECT 1.8C	
FORTUNE/WINREC	
PROCALC	Probably the best software Atari has ever produced?
CALAPPT	"
DIAMOND EDGE 1.04	?
EDLUTIL 1.1B	ST Screensaver that had problems with Overscan on ST seems happy with ScreenBlaster and Falcon video modes. Atari's built in screensaver is a joke!

### Programs that have some problems (all resolutions):

PURE C 1.1	Use debugger separately to avoid crash on quitting.
CONNECT 1.62	Menu selection bug, otherwise OK.
1ST WORD PLUS	
FCOPY III	Not HD
XCONTROL 1.1/1.31	Can save window colour changes incorrectly!
Nearly all demos	Don't check resolution and may damage monitors.

### ST Programs that seem OK (ST resolutions only)

CALAMUS 1.09N	But doesn't like MultiTOS - but what does?
ARABESQUE	Different from Arabesque Pro.
OXYD™	Mono version
OVER_IMG	Mono resolution ONLY (screen snapshot utility from ST OverScan).

### ST Programs that will need updating (ST resolutions):

XBOOT 2	Does not like #BLITON/OFF references in .DEF!
TEMPUS 2.11	Slight window updating and item selector faults (2.13 is worse!). Launching a program causes a crash on quitting
DBACK 2.51	Will not format disks (DD or HD), thinks VGA is ST low res!
TRACKMAN	Uses Modem port directly to get another MIDI port.
CUBASE	"
CREATOR	"

### ST Programs that definitely do not work:

RUFUS	Or any Comms/Fax program using Modem port directly
UNITERM	"
DTERM	"
KCOMM	"
ST220	"
BIGSCREEN	ScreenBlaster has a virtual screen.
ESPRIT	Despite being in Users manual screenshots!
KAOSDesk	Or any other ST replacement desktop pre TOS 4.
Most games	Or any program using screen directly.
KnifeST/MUTIL	Or any other non-HD disk editor.

### Utilities desperately needed:

Disk/File editor, HD formater with extra tracks/sectors.  
CPX that sets up LAN as modem2 & printer.

### Problem areas:

AES	Too slow and inefficient even at 32MHz, more bugs than ever!
MultiTOS	Just forget it: decent software needs all the power available and more. Totally misconceived. Only of interest to salesmen, journalists and other low life that are not going to use it.
Sound Matrix	Unacceptable clicks may damage expensive audio equipment
Keyboard	STILL gets typed order of keystrokes wrong! (AES/IKBD fault.)
LAN & Modem ports	Did you really expect Atari to make these usable?
Warm reset	Ctrl-Alt-Delete Causes burst of keyclicks on loudspeaker about 60% of the time (devastating with external amplifier) or looses screen.

This list is not comprehensive, it just reflects my personal experience and bias. A non-disclosure agreement with Atari prevents me from revealing more.



figure SpeedoGDOS to the 5 fonts you require (such as Symbols) using Outline.Acc before loading Easydraw (no need to reboot).

Phil Hodgkins

## Desktop Colour Icons

**A** The DESKICON.RSC file can be extended with a Resource Editor and the only one that does the job so far is Interface version 2.21 from Shift in Germany. This program will convert ST mono and Windows colour icons to the Atari format as well as providing comprehensive editing.

Although Atari have released Colour Icon details for general AES use, there is no discussion on their use in the Desktop and there are a few points to observe:

- 1) Desktop Icons appear to be restricted to a 32 x 32 pixel format with a 12 character string; anything other will be displayed incorrectly.
- 2) The objects in the file are not checked by the Desktop! Encountering a mono-only icon in the resource file will crash the Falcon!
- 3) Every icon needs a mono and 16-colour version and their selected versions; these will be used as appropriate in ALL resolutions.
- 4) The icon assignment has to be saved in NEWDESK.INF.

Graham Hinton

**A** A program capable of editing Newdesk Colour Icons is Interface from Hisoft. The program is a classy RSC file editor and has very good icon support. It even lets you create 256-colour Icons grabbed from your favorite pictures.

Rob Perry

## Colour Icons

**I** Falcon programs using colour icons will crash on an ST with TOS versions not supporting colour icons. For backwards compatibility an alternative .RSC file has to be provided.

In TOS 4 ST Medium or High resolution modes a mono version of the icon is used which also has a separate selected version like the colour icons, so "animation" effects are still possible. On the ST the mono icon is pixel reversed when selected.

Graham Hinton

## LAN Port

**A** This port is misnamed; it is actually similar (one extra pin) to the Mac Serial Ports and has the same UART Zilog Z8530 and similar driver circuitry behind it. The theory is that "somebody" will port the Appletalk software over and, presto, a LAN for free. The practice is that you can use Mac cables and TOS 4.00/TOS 4.04 does not even work for asynchronous RS232 comms unless FPATCH2 is installed

# Falcon PD and Shareware Update

**MUS.98:** This updated disk now includes: Pro-Tracker V2.1a by Griff of Electronic Images - plays MOD sound files at 50KHZ 16-bit (15 bits per channel) with stereo output. Features: 32-bit interpolation, is compatible with all NoiseTrackers up to NT2.0 (Amiga), features all Protracker commands, does 'CIA timing' to play modules using the Tempo command, and decrunches Amiga PowerPacked mods!

**MUS.99:** Soundtracker Modules and player. Amiga soundtracker modules for playing with Pro-Tracker at 50kHz with 16-channel emulation for the best output ever. Modules are: Absence Live, Ace, Acid, Acied, Axel F.(F)

**MUS.100:** More Amiga Soundtracker Modules: Beasti, Beyond, Dance Little Bird, Blazzering, Blue Monday, Celscape and Chance.(F)

**UTL321:** This updated disk now includes: FPATCH 2 - latest version of the Falcon patch program. HDX 5.03 and AHDI 6.05 - latest Atari hard drive utilities, fixes the 'overwrite next partition' bug. XCONTROL - latest version of X Control.

**XXX.248:** This updated disk now includes: TERMINAL F-UP - Sanity's real-time true-colour zooming rotating 50Khz modfile screen. RGB/TV (50/60Hz) only.(C:F)

**XXX.257:** BIRDY 2 Demo - funny animation (C:4Meg).

**CMP.18:** Compilation Disk: contains (in LZH archives) all of the updated items on disks MUS.98, UTL321, and XXX.248 as described above.

(DON'T use FPATCH1!) and even then there are still bugs. Nothing in life is free except trouble, with computers more so.

There is a lot more to Local Area Networks than providing a connector as anyone who has designed as many LANs as I have (one: RML's) will understand. The entire structure of the computer from the operating system up has to be optimised with network usage in mind. This includes the interrupt and DMA structure, operating system calls, the file handling, the user interface and the desktop. I don't know of ANY current commercial computer that even goes half way to achieving what a USER really requires. The current version of the AES cannot even cope with RS232 interrupts at 1200Bd (or any other rate) so until this is entirely re-written - forget it. The Falcon hardware could be made to provide a LAN workstation with a lot of serious development, but not with anything resembling TOS in it.

For now the LAN port can be used with bios calls as devno 8 in the same way as the Modem port (devno 7) and that's it. One day computer manufacturers might realise that users want to use more than one serial port simultaneously...

Graham Hinton

## Falcon Monitors

**Q** I am thinking of getting a Falcon soon and I was wondering if anybody reading this can tell me which is the best type of monitor to get (Atari SC1435 or Super VGA) so that I can get the most graphic modes without using inter-

lace. Also can anybody tell me if it's possible to make a software ST emulator for the Falcon? I think it should be relatively easy because most of the operating system is the same or very similar and routines to emulate the ST's traps, vectors and sound system should be quite straightforward.

Robert Coare

**Q** Can anyone supply information on using a multisync monitor with the Falcon? Do I need a new lead (I have one for a SVGA monitor) and what happens to the screen mode selection dialogue? Do extra modes appear or is it a case of rebooting each time to change between VGA and RGB (TV) modes?

Phil Hodgkins





# UPDATE

Version 13.7 ~ October 1993

## Astronomy

**UTI.322: Astronomy: NORTH STAR** - Northern and Equatorial star atlas covers all the forty three constellations of the Northern and Equatorial sky and provides the names or numbers of almost 1600 objects (C); **FLY BY SAT** - Cyber animation of a satellite animation; **VOYAGER** - Cyber animation; **PICTUREW** - collection of Degas pictures including shots of Jupiter and Saturn; **JUPITER** and **M83** - two Spectrum 512 pictures.

## Communications

**COD\*10: FST v2.0** - latest version of the comprehensive Flying Start Viewdata package. **VANTERM v4** is now also on this disk, cosmetic changes, minor bugs fixed, and a few

rough edges cleaned up (also on disk COM.48).

**COM.47: FreeZe Dried Terminal** has been updated to v2.20

**COM.56: KM TERM v1.92:** powerful and flexible VT52, VT100, & ANSI terminal emulator that can be easily customised.

## Drawing

**DRG.55: MiniDraft** has been updated to version 1.26. New features include: new style interface, Autoscroll for working on bigger than screen pictures, and elements may now be positioned by entering X and Y co-ordinates.

## Education

**EDU.51: PLAYTIME:** Drawing - basic drawing package. **MATHS GAME** - maths teaching

game with 6 levels and a performance charting system. **COLOURS** and **SHAPES** - teaches basic colours and shapes using sampled speech (1Meg). **BALLOON GAME** - basic 'propeller them up' number game. **BENSBONES** - eight-level number teaching games. **DRAWING WITH SHAPES** - simple package for making pictures from shapes. (C)

**EDU.52: SAMPLE TIME** - sample mixing desk with 15 samples. **WEATHER TIME** - draw weather maps, print them out, and present a forecast. **PICTURE TIME** - upmarket version of 'fuzzy felt'.

## Calamus Fonts

**FON.158: Ikon Graphics Calamus Fonts:** Six fonts designed by Ikon Graphics: **Croissant** - an Art Deco face which reminds you of ...er... croissants. **Estilo** - based on a Wild West face called 'Estro' - great for posters. **Mordred** - an early mediaeval stone cut uncial. Capitals only. **Shahrazad** - based on Scimitar from the Solotype Corp. It has an obvious Middle Eastern feel. **Versalis** - Capitals only (intentional), no numerals (quite deliberate). These are the mediaeval versals (superbig capitals) found on mediaeval manuscripts. Use on their own for logos, headlines etc or with a good blackletter face like Old English. **Isengard** - ST Review seemed especially to like my 'Vampire' font, so here in similar vein is something equally prickly. It's basically Vampire distorted but with some letters redrawn. The overall effect when placed side by side with Vampire is that of a totally different font. **Plus a selection of good quality PD fonts:** **Cascade**: A modern display face with a calligraphic feel. **Chinatown**: 3D pseudo-oriental shadow font. **Dolmen**: Art deco chunky face. **Enviro**: Sophisticated monoline script. **Frankenstein**: Horror movie font. **Freeport**: A modern script face. **Gaelic Antique**: A deliberately rough uncial. Looks good as body text, not so good at large sizes. **Hispaniola**: In the manner of the 'Chancery' scripts of the 16th century. **Instant Logo**: Not a font but a set of graphics for creating logos. **Lithium**: Based on Lithos Bold, a sans serif with overtones of ancient Greece. **Marker**: A felt tipped pen script. **Memphis**: Bizarre modern arty font, good for pop and fashion promos? **Quaint**: A roughly drawn slap-it-on-the-wall sort of font.

## Games

**GAM.225: Strategy Games: COLOR**

## New PD Disk Prices

### The Bad News

Having held our disk prices through a 2.5% VAT increase, postage rate increases, numerous floppy disk shortages, increased printing costs, and various other price rises, we have found it necessary to restructure and increase our prices for PD and Shareware disks.

### The Good News

Taking a look through the adverts in the ST magazines it looks as though we still have one of the lowest charges for supplying PD and Shareware disks! Not that you should choose a supplier on the basis of price alone; our service includes:

- Quality disks duplicated with professional levels of quality control.
- Same-day dispatch of orders by 1st Class post.
- Eight years' experience in supplying Atari software.
- Support by telephone, mail and FAX if you have questions about our products.
- Regular updates on the latest PD and Shareware printed monthly in this magazine.
- Comprehensive printed catalogue supplied free of cost.
- Invaluable A to Z catalogue disk available for just 75p.

### The Prices

We now charge a flat rate of £1.25 for handling, package and postage on all orders for PD disks. PD and Shareware disks now cost £1.25 each regardless of the quantity ordered.

### The Bonus

Budgie Licenseware Disks that used to cost £2.95 and £3.95 now cost just £2.75 each: these disks are described on pages 55 to 58 of our catalogue.

### Sample prices:

1: £2.50	5: £7.50	9: £12.50
2: £3.75	6: £8.75	10: £13.75
3: £5.00	7: £10.00	15: £20.00
4: £6.25	8: £11.25	20: £26.25.



# Cascade CHINA Dolmen FRANKENSTEIN Freeport ENVIRO Croissant Estilo Isengard MORDRE URSALIS SHAHRAZAD £\$%&\*~&x()x~

FON.158: Calamus Fonts

**CLASH** - original and colourful shareware puzzle game from Animalsoft. **BLOKDROP** - variation on Tetris. **FIGHTING SAIL** - battle game between two sailing warships, play single battles or campaigns. **MINESW** - ST version of the Microsoft Windows freebie. **OTHELLO** - Reversi game. **SPACEWAR v3.1** - 2 player Startrek game. **THRUST** - Reaction testing game. **VALGUS2** - 2 player version of a Tetris style game. (C)

**GAM.226: AIRFLEET LANDER** - A lunar lander game. **BAND WORM** - move a worm around so that it eats the little black dots. **BLOB RUN** - platform and ladders game, fairly basic graphics but the game can be horribly difficult in places. **SUPERGUN** - Artillery game. Lots of skill required. Difficulty is improved with the changeable wind conditions. (C)

**GAM.227: Casino Games: 68000 FRUIT MACHINE** - Gambling game. Features include 4 sub-games, for extra bonuses (C). **FRUITY** - fruit machine simulator with holds, nudges, features, bank, etc (C). **FRUIT MACHINE v1.5** - good gambling machine simulator with smooth graphics (C). **OH CRAPS** - Gambling simulator. **POKER NITE** - card games. Play 3 different variations of poker, with 5 other computer players. **ROULETTE** - Gambling casino simulator.

**GAM.228: Traveller Aids:** extensive collection of Traveller role playing game aids. Programs include: Atlas, BCG, BNF, NPC, Bestiary, Culture, Psyche, and Religion.

**GAM.229: INSECT** - snowball fights using modest space technology, big-band sounds, Latin rhythms and a voice that shouts "Nairobi!" every time the Speed Moth gets hit. **PENGUIN** - An infuriating shareware game. Get your penguins to the finish gate without having them killed off. Although difficult, it has nice graphics and music, and makes a good puzzle/arcade game. **RABBIT JUMP** - carousel style game.

**GAM.230: CASTLE CAPERS** - help Chuckle escape from nightmare castle

**DEMOLITION MAN v1.3** - Try to find the hidden bombs, and avoid being blown-up. Quite good (C). **DOSH** - 3D action/adventure game. **EXPLODE** - try to take over a game

board by exploding the opponents pieces. Very difficult to win against the computer. **HACMAN** - Pacman game. Nice, colourful, and easy (C).

## Graphics

**GRA.187: Graphics Utilities:** BGIF - Converts GIF format pictures into PI1 and SPC files (C). **CNV2GIF** - Converts NEOchrome & Degas PI?, PC? files into GIF pictures. **DUMPLAB** - takes 'dump' files from David Buck's DKB 2.10 (on the PC) and converts them to PI1 (Degas) or PBX (Quantum Paint) files for use on the ST. **FLI2IFF** - converts animation file saved from Autodesk Animator (written by Jim Kent of Aegis/Ani/Cyber/Zoetrope fame) into Deluxe Paint ST animation format. **IFF PLAY** - Deluxe Paint ST IFF animation player. **JPEG** - ST adaption of v3A of the IJG's JPEG image compression and decompression software. **METAFIX** - alters Gem Metafiles

produced by GFA Draft so that they can be used by Easydraw and Calamus. **METAVIEW** - View GEM metafiles (.GEM). **MOLLY** - Pretty pattern generator. **PICDISP** - viewers for Degas and Spectrum pictures. **PUZZLER** - Scrambles up pictures, for you to un-scramble. **RAMWORLD** - 3D object creator and viewer. **SMALVIEW** - picture viewer for Degas and Neochrome pictures that creates mini 80x50 minatures of the pictures. **STRINGAR** - Line art.

**GRA.188: Mandelbrot Packages:** **EXPLORER v1.0** - Mandelbrot set generator. Easy to use Gem application. Presets available for your own explorations. **FRACTAL WORKSHOP v1.5a** - Fast generation of the Mandelbrot set or a Julia set with user-defined complex constant. **MAN** - Mandelbrot generator. **MANDEL** - Fast Mandelbrot Generator written in 68000 assembler. **MANDLBRT SET** - Acc and Prg to create a simple Mandelbrot. **MOUNTAIN v2.1** - Fractal map and landscape generator. Plenty of options. A bit slow, but should provide many hours of fascinating viewing. **MULTIMOD** - pattern generating programme.

## Information

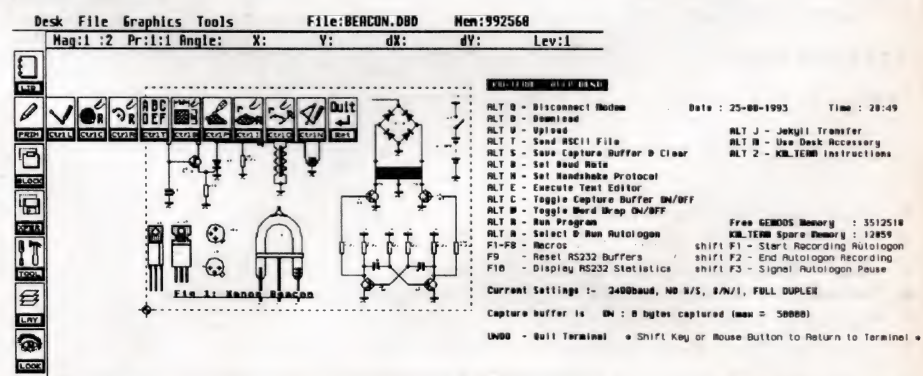
**INF.29: OVERSCAN v1.7** software source code updated for compatibility with DevpacST2.

## Languages

**LAN.140: MNILU** - the GFA Basic 2 compiler has been now updated to v1.60.

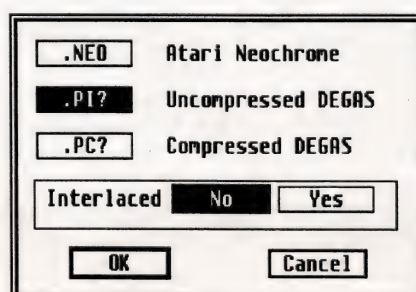
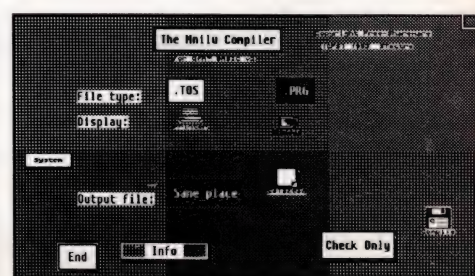
## MIDI

**MID.84: MIDI Product Demo's: IMPROVISER v1.4** - Demo of this educational music



MiniDraft on DRG.55

KM TERM on COM.56

CNV2GIF (image format converter)  
on disk GRA.187MNILU (GFA Basic 2 compiler)  
on disk LAN.140



program designed to help teach about the way improvisation and composition work. **JV80** - JV80 Editor Librarian demo. **PROTEUS** - Protege 123 Editor from Essential Software.

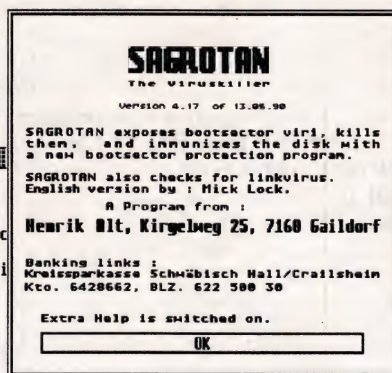
**MID.85: MIDI Utilities: DW8000ED** - Korg DW8000 Mixer Map for Cubase Midi Manager. **ECHO SEQUENCER** - a ten track beginners MIDI sequencer written in STOS basic. **MIDI MENU** - monitors midi inputs and interprets data received, runs a system test, and has a manual send mode for the more experienced midi user. **MIDI TEST v1.0** - tests MIDI cables. **PSYCHO v1.01** - MIDI Picture Modulator Program that allows the user to colour-modulate low resolution pictures on the ST by means of MIDI commands (C). **ROBO BOP** - lets you create rhythm patterns by pasting notes into grids.

## Utilities

**UTI.176: SAGROTAN**: the English version of this brilliant virus-detecting package has been upgraded to version 4.17.

**UTI.253: LITTLE GREEN SELECTOR** now updated to v1.8D - now TT and ISAC large screen compatible, keycode compatible with CodeKeys, and the Flush and Find facilities are now more robust.

**UTI.266: WhatIs** updated to version 6.4 - will now identify over 125 different types of



files and can act as a "WhatIs server" - specially-written programs can use WhatIs to identify file types for them!

**UTI.230: ST ZIP** now version 2.2 - numerous minor improvements and bug fixes, including ability to save or print all or part of a file in File Display mode.

**UTI.277: SUPERBOOT v8.1** Update. File limit is now 1824 files through use of a new Multi-Page file selection mode; the reserved file type for GDOS ASSIGN.SYS files has been removed and an additional "Other" file slot has been added; Super Boot can now be called from other programs with a command line argument and will play DMA sound files in stereo or mono!

## ST Computer

### German PD Disks

The following disks have been compiled by ST Computer magazine in Germany. Most of the programs run in mono and the programs and documentation are usually supplied in German only.

Details of many more of the latest ST Computer disks will be in ST Applications issues 35 and 36.

**STC.610 and STC.611: ST Computer Disks 610 & 611: Escape**: very fast bouncing ball arcade game (C:F).

**STC.612: ST Computer Disk 612: Lübke**: Automatic English-German translation program. Occasionally produces extremely witty translations. (Lübke was a German politician way back in the Sixties who thought he had a good command of English, and is reputed to have said to the Queen "Equal goes it loose" (= "Gleich geht es los") when some event was about to start. This word-for-word translation became known as "Lübke-Englisch".) **Alice**: latest version of the text editor specially designed for C programmers, de-bugged and with new functions.

**STC.613: ST Computer Disk 613: Iconeer**:

## Users' Guide to First Word

This ring-bound guide to the precursor of First Word Plus is aimed at introducing the basics of word processing in the GEM environment, and at building up the user's confidence with more advanced features.

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- \* Printer drivers
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# KEY

All disks should run on an Atari ST, STM, STF, STFM, STE, Mega ST, Mega STE, TT, Stacy or ST Book with at least half a megabyte of RAM, a double-sided disk drive and a mono or colour display - unless the disk description advises otherwise. We no longer support single-sided disk formats. Disks have not yet been tested for Falcon030 compatibility - details on this will be reported in future Updates.

(M) - Runs in High Resolution Mono.

(C) - Runs in Medium or Low Resolution Colour.

(1Meg) - Needs one megabyte of RAM.

(Not TOS1.6) - Will not run under TOS 1.6 (STe) or TOS 1.4.

(\$ ) - source code included.

(\$C) - C language.

(\$ASM) Assembler.

(F) - Falcon required.

Copyright: To the best of our knowledge everything on the disks in this catalogue may be freely distributed. If you know otherwise please let us know and the offending software will be immediately withdrawn.

This catalogue is originated and copyright the ST Club.

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## Ordering Details

Please note that we do not accept orders by credit card. Orders accompanied with a cheque or postal order are dispatched by 1st Class post on the day we receive them.

All PD disks are copied onto high quality disks from known manufacturers. The price you pay us for PD disks covers only the costs of acquisition, duplication, cataloguing and distribution.

### PD and Shareware Disk Prices

Each	£1.25
Handling	£1.25 flat rate
5 disks	£7.50
10 disks	£13.75

Licenceware disks cost £2.75.

All prices include VAT, packing and 1st Class post.

**The Order Form for these disks is on Page 57**

icon editor for the ascii icon data files used by Phoenix. Runs entirely under GEM, in Multi-tasking environments and all resolutions. **Ultimate Tron ST:** Very good implementation of the popular Tron game (M). **ST-Clock:** analogue clock as large as the screen (M). **SinuST:** small GEM-based sine curve plotter for schoolchildren (M). **Centi:** latest version of this centipede game. **Printer:** Prints Ascii files on the HP DeskJet. **Domino:** Play dominoes against your computer (M).

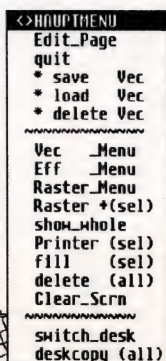
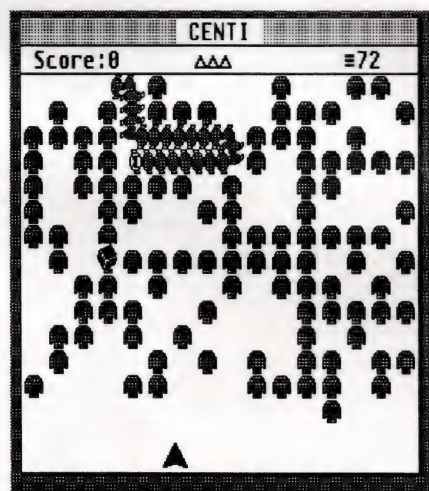
**STC.614: ST Computer Disk 614: Wega development kit:** new version of the popular library by Dietmar Rabich for Pure C. With lots of functions for programming a clean GEM interface.

**STC.616: ST Computer Disk 616: Adath:** Mini-Database program. Very compact, but has a poor user interface. **TI Game Collection:** new versions of many of the smaller games (M).

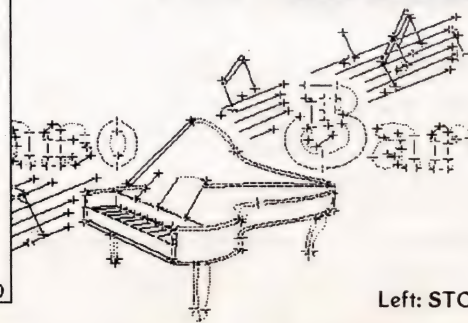
**STC.617: ST Computer Disk 617: Lexicon:** German vocabulary for use as supplementary dictionary with First Word Plus. **Linguix:** update of this command line-oriented word processor.

**STC.618: ST Computer Disk 618: Kassa:** Small accounts program for personal and small business use (M). **Expander:** runs GEM programs from within other programs. Unfortunately, will not work with programs that have their own menus or desktops.

**STC.619: ST Computer Disk 619: Vec-Work:** Vector graphics program (M). **Video management:** Video database that is easy and quick to use (M).



Above and right:  
STC.613



Left: STC.619 (Vector Graphics)

## Budgie Games

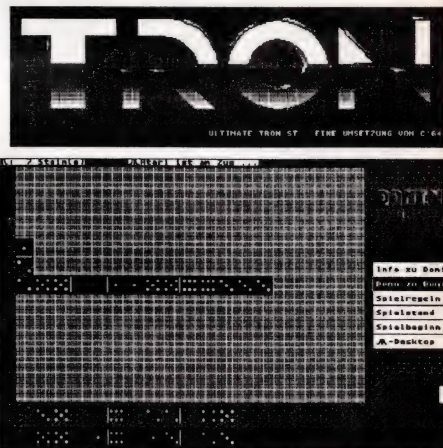
These disks now cost £2.75 each

**GBU.116: THE SPITTING FISH** - an educational game by Stein Arne Jensen. In the Mekong river there lives a fish which catches flies by spitting at them! Although it is born with the needed physical attributes, the ability to hit must be developed through lots and lots of practice. In this game, you are the mother fish struggling to feed her young. The game includes several maths interludes to gain extra strength. It is therefore aimed at younger users. Instructions in five languages! (C)

**GBU.117: TROLLS** by Chris Skellern. A great Spirit has zapped Billy into the world of fantasy and danger. A world of Trolls and Traps. Billy's life is in your hands. Guide him through the maze with the cursor keys. Listen to the trap meter and collect magic pebbles to temporarily reveal the nearest traps. An unusual game, with nine levels, requiring skill, logic and memory. (C)

**GBU.118: SLALOM** by Rafal Rudzki. A fairly conventional slalom game which would attract little attention were it not for the fact that it is extremely smooth, offers five different courses and even plays a game of pong in a different window while going down... Full 68000 source code included. Also on disk, by the same author, The JUMPING GHOST. (C)

**GBU.119: FOOTBALL TACTICIAN 1** (The Premier League). Originally released at £19.95 Football Tactician 1 sold more than 2000 copies on the ST and Amiga. Here is the complete 92/93 version with all Premier League teams and players accurate up to the end of the season. Although the commercial version is now enhanced to FT2, this original release is still one of the most accurate and playable football simulations available. (C)





# Beginners' Forum

## Hard Disks (Part 2)

*This month, Mark Baines looks at the ICD utilities and other software useful for new users of hard disks.*

Last month, I finished by mentioning that manufacturers who produce their own Host Adapters also have to provide the software drivers for them. The best of these utilities is from ICD and can be found in PD libraries.

### ICD Utilities

The first program to run is ICDFMT. It will format and partition your drive and check for bad sectors, see Figure 1. Most things in the Main Menu can be left as defaults. ICD will usually fill in the drive details for you, if not you will need to refer to your drive documentation. At first, leave the Interleave as 1. The interleave determines the maximum speed that data can be read by the drive by deciding how the sectors are arranged on each track. An interleave of 1 means that the sectors are numbered consecutively (1, 2, 3, 4...), an interleave of 2 means that one sector is placed between them (1, 10, 2, 11, 3, 12...), in other words, two separate sequences of sectors are interleaved together. Some drives are not fast enough to be able to read consecutive sectors as they pass beneath the heads and so have to wait for another revolution of the disk before they appear again. The ICD utility called RATEHD will measure the Data Transfer Rate of the drive and you can format the disk with various interleaves, run RATEHD and note the Data Rate, finally formatting the drive with the interleave value that gave the best result. Formatting a drive doesn't take long and it may be worth the bother.

Verify Passes is the number of times that each sector is checked to see if it is bad. It is rare to find bad sectors on a new hard disk and leaving this at 1 will suffice. The larger this number, the longer it takes to format the drive. Click on Format and the drive is formatted ready for use.

### Partitions

Most hard disks have a large capacity and a worthwhile way of using one is the divide it up into different sections called partitions. A partition is actually the boundary between the divisions but the term is more often used to describe the divisions themselves. These partitions can be used for different purposes – for instance, I keep all my graphics stuff in one partition and my comms programs in another. One way of organizing yourself is to keep all your data files in a separate partition which makes backing them up easier. Another thing to consider is having a small boot partition, the one that will contain your AUTO folder, accessories, DESKTOP/NEWDESK.INF files and programs such as Superboot (see Issue 32). Most hard disk crashes happen to the boot partition and so when the inevitable (I'm afraid so!) occurs, there won't be much lost. How you divide up your disk is up to you – there is no right or wrong way, but do start off with good habits and think about the structure of your partitions and folders from day one.

Each partition will have a drive letter attached to it. These will be virtual drives – that is, they do not

exist as separate, physical drives. One physical hard drive can contain a couple of virtual or logical drives. TOS allows up to 14 virtual hard disks starting from letters C to P. Any of these virtual drives can also be RAM disks (see Issue 31).

So, next, you need to partition the drive – see Figure 2. The ICD driver will allow up to 64 partitions although only 14 can be available at any one time. The ICD DESKTOP program will allow partitions to be switched on or off – one way of protecting a partition from prying eyes or clumsy fingers! There are several options available to you to set up your partition sizes. Split will equally divide the drive up into the number of partitions you want. Max will make as many partitions the maximum size possible depending on the TOS version. TOS 1.0 and 1.2 allow GEM partitions with a maximum of 32,768 sectors (16Mb) and later versions allow 65,536 sectors (32Mb). BGM partitions can be up to 16 times larger – achieved by using bigger logical sectors than 512 bytes – but this has the disadvantage of making cluster sizes larger and disk storage inefficient (see Issue 29). The best method of installing your partitions is to set the MEGS button and type into the Size column your partition sizes. Then, click on Sectors and Recalculate and see how many sectors you have left and add these to the Size column. Give a name to your partitions and make sure all are On. Write all the details down or print off a copy and then click on Partition Entire Hard Disk. The boot, FAT and directory data is written to each partition making it ready for use. This will take some time.

After the disk is partitioned you need to go to the Desktop to set up your drive icons so as to make them available. See Issue 31 on how to do this.

### HDUTIL

Next, you need to run the Hard Disk Utilities program HDUTIL, see Figure 3. Most drives can autoboot and this allows your system to boot from the hard disk rather than a floppy. You can still use a boot-up floppy if you wish, but it makes things much slower and less convenient, especially if using Superboot or XBoot. Click on Boot and select the drive to boot from which is normally drive C. You will need the floppy disk with ICDBOOT.PRg in the AUTO folder on drive A. The boot sector

is changed in the boot partition and the ICDBOOT.PRg will be copied to the root directory of that partition and renamed to ICDBOOT.SYS. Do not put the ICDBOOT.PRg in the AUTO folder on the hard disk boot partition and do not rename, move or delete ICDBOOT.SYS. The boot sector now contains a little program which, when run, tells the computer to run ICDBOOT.SYS which, in turn, boots up the computer and initializes it so that it is aware of the hard disk and its partition structure. If you do not want to boot from the hard disk at any time, i.e. when running a games disk, then hold down the Control, Alternate and Shift keys when the computer is turned on until after the floppy disk drive light comes on. To access the hard disk after this, run ICD-BOOT.PRg from the floppy.

The Zero option will clear the directories so that the drive appears empty. Wipe will irreversibly remove all the files from the drive. The Map option will map out all the bad sectors on the disk making them unavailable for use by TOS. This is useful if, after some time, you suspect that the drive has become damaged in some way. This may happen if you hit the drive or table it sits on sharply when the heads are accessing data causing them to hit the surface. Up to several hundred is tolerable, but more than that and you need a diagnostic program like Diamond Edge or ICD's Cleanup to see what the matter is.

The most important function in HDUTIL is the Configure option – see Figure 4. You need to choose the ICDBOOT.SYS file you wish to configure, normally the one on C. When the drive and controller has a problem status messages are shown in the top, right-hand corner of the screen. Leave these on. Enable write verify means that everything written to the drive is checked against the contents in memory. Disabling this doubles the speed of write operations and is worth doing as it's almost unknown for a hard disk to write data incorrectly. Enable read caching and Enable write caching are two features that speed up disk operations. A disk cache is a block of RAM set aside for the hard disk to use. The head mechanism can read a whole track full of sectors just as quick as one sector and so read caching is performed by reading more than the required number of sectors and storing



that data in the cache. It is quite usual that when data is requested from a drive it follows on from the last request's data and so it will be found in the RAM cache and read from there which is a much quicker operation than getting it from the disk. Read caching isn't effective with large blocks of data but speeds up reads of small blocks, single bytes, FAT and directory accesses. Write caching is similar. Write operations involving fewer sectors than the size of the cache block are held in memory and then written to the disk when the computer isn't accessing it after about half a second. Too long a gap could mean that when you switch the computer off, data is still in the cache. If you use this feature then always wait a couple of seconds after writing to a disk (such as saving a file) before switching off. I suggest you use both. The Number of blocks in cache should be as many as you can spare, the more you have, the longer data is kept in the cache. The Number of sectors in cache block should be less than the number of sectors per track, more will increase the head movements and slow things down. All this is very expensive on RAM and keep clicking on Recalculate to see how much you have used. Experimentation is the answer. CACHEIT will give you statistics on how well the caches are working.

Leave the Logical Sector Size at 512 bytes. Increasing the number of DOS data and FAT buffers speeds up how TOS uses the disk, especially when reading FATs and directories off a drive. You will see this in faster updating if directory windows. Have at least ten of each, they aren't expensive on memory. If you use the FOLDXXX.PRG TOS patch program then you can dispense with it and allocate the extra folders here. I can thoroughly explain the "40-folder bug" at another time if you want. Skip IDs will enable you to tell ICD not to bother trying to see what else is attached to the SCSI bus when booting up. The resolution of the computer at boot up can be selected here also or skipped over and the ICD clock on some host adapters (usually SCSI ID 6) can have its time updated at boot up. Don't forget to save the settings and the computer will reboot to reinitialize.

#### Other utilities

CACHEON and CACHEOFF will turn the caches on and off, HOST

determines your host adapter type, HDPARTS gives some extensive information on the partitions. COLDBOOT may be useful for some people who have a hard disk that doesn't autoboot first time. Put it in the floppy disk AUTO folder where it will reset the computer and boot up the hard disk. COPYFIX is a useful program that stops some TOS versions from updating the date stamp on files when copying them from one disk to another. INSTALL can format, partition and set up a drive for autobooting automatically for you using default values.

If your hard disk is an older model and doesn't auto-park its heads when you switch off then you need a program to do it (NEVER move the disk drive without the heads being parked). Use ICD's HDPARK or Atari's SHIPACC.PRG. If you aren't using the ICD driver then Atari's CACHEXXX.PRG increases the size of the GEMDOS FAT and data buffers.

An alternative desktop such as NeoDesk makes access to all the files on the hard disk easier. Superboot or XBoot is necessary to set up the right environment when

you boot up (see Issue 32). A good backup program, such as Vault (UTI.146) or Diamond Back will be required. A decent replacement file selector is a necessity - LGSELECT, FSELECT, SLECTRIC (all PD) or UIS III are recommended. A disk diagnostic program such as Diamond Edge which will repair your disk when it gets damaged and enable you to recover deleted files is another must. It also defragments your disk which speeds up disk accesses after it has had some use. Michael Baxter explains this on page 15 in Issue 31. One useful facility that Val Gutz of Oldham asked for is to be able to protect the hard disk from his son when playing games. There is a small accessory in the public domain from Timothy Purves of Mich-Tron called PROTECT. You can write protect any drive including RAM disks so that when a program tries to write to it the screen flashes and refuses access. Very useful when testing out unknown software.

Do be very careful about some PD hard disk utilities. DLII and REORG are popular but the latter is not a finished program and can cause havoc, especially when un-

deleting files and on partitions greater than 16Mb. It and many others assume too much about the hardware or are poorly written. Ask for advice before committing your hard disk and all that software to an unknown program.

Send me a letter or EMail with ideas for future articles. Thank you for the letters received so far. Although I can't promise to respond to all personal queries, I'll do my best. A SAE is welcome. You will also find me on CIX and the NeST, TurboNet and FidoNet BBS networks where this magazine is supported.

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STA support in N.ST.MISC echo  
FidoNet: 2:259/29.10  
STA support in ATARIST echo  
TurboNet: 100:106/0.10  
STA support in T\_ATARIS echo

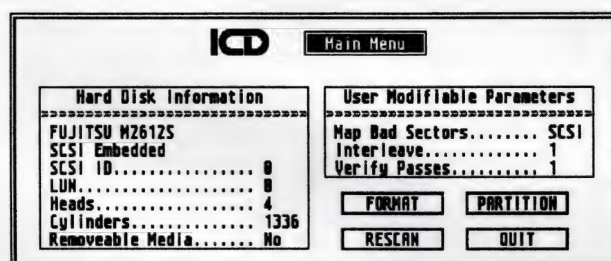


Figure 1. ICD FMT Main Menu. The settings on the right will do for most occasions.



Figure 3. HDUTIL Main Menu. Be careful with Zero and Wipe!

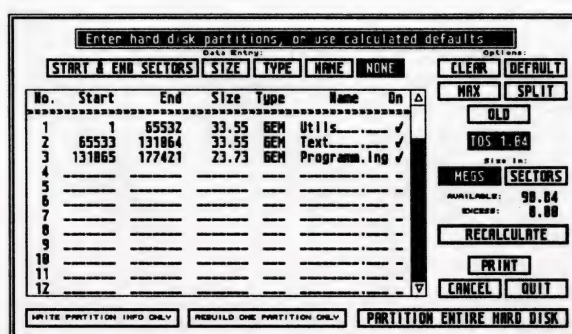


Figure 2. ICD FMT Partition dialog. A 90.84Mb drive with two maximum size partitions.

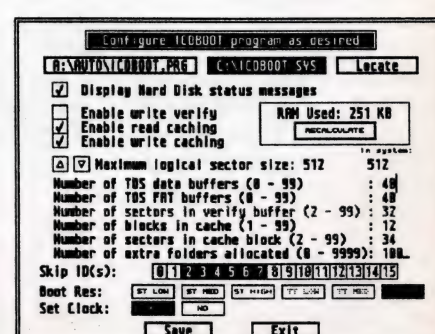


Figure 4. HDUTIL Configure dialog. Always keep a backup of ICDBOOT.SYS.



# DESKTOP DISCUSSIONS

## The Runt of the Litter

*William Hern wonders whether Atari, in its haste to get low-cost Falcons on to the market, may be unduly limiting the scope for software development.*

Most writers will agree that the hardest part of any writing is the beginning. The opening text must be interesting and sufficiently entertaining to attract the attention of the reader and entice them into reading the rest of the piece. As a columnist that's a tall order to do on a month-in, month-out basis as it's not easy to think up new ways of introducing recurring themes. It usually takes me about as long to write and polish up the first paragraph as it does to write the rest of the column.

Lately I've been getting some help from a computer program called IdeaFisher. It essentially is a brain-storming tool and, while it can't do my thinking for me, it does help me come up with ideas about how to present material. More than once it has helped me find a fresh angle on a much discussed theme or think up an appropriate title for a piece.

Unfortunately IdeaFisher has one critical flaw. It doesn't run on an ST, and, for reasons I'll explain, I fear that we may not see it or software like it on the Falcon either.

There's no fundamental rea-

son why IdeaFisher can't run on the ST. It's basically just a sophisticated text database and so doesn't need supercomputer processing power nor gigabytes of memory to run in. It does however require a hard disk as its data files take up nearly six megabytes of storage space (and that, according to the developers, is compressed down from twenty five megabytes). There is no way that you could run this program from a floppy disk.

Hard disk only software has not done too well on the ST. Remember K-Roget, Kuma's thesaurus program which could only be run from a hard disk? How many copies did it sell? Given the small percentage of ST owners who have a hard drive, you aren't likely to ever see much hard drive only software.

But what about the Falcon? Although I'm pleased that you can now buy a Falcon without having to personally blackmail one of the Tramiel clan, I don't welcome the introduction of the one megabyte machines without a hard disk. My fear is that software developers will make it the standard machine to develop for, so cutting at a stroke much of the potential for innovative and eye-catching software.

You think I'm over-reacting? Remember when STs came with single-sided drives? Although no ST has been sold with a single-sided drive for a good number of years, and the vast majority of ST owners now have a double-sided drive, there is still plenty of software that is shipped on single-sided disks. It's the old story of companies going for the lowest common denominator and so maximising the

potential market for their product.

The Amiga on the other hand was only ever sold with 880K disk drives. Amiga developers thus had over twice as much storage space to use as their ST counterparts, space that they were able to capitalise on to produce games software with larger playing areas, flashier graphics and better sound effects or applications with more features.

I fear that history may be about to repeat itself with the Falcon and the hard disk-equipped Amigas which Commodore are now heavily promoting. While a 1.4Mb floppy disk may sound like an impressive amount of storage, how can it compare to a twenty megabyte hard drive?

There's no question that the Falcon is an impressive machine. Its sound and graphics capabilities are particularly mouthwatering but these are the very features that are most likely to be restricted by a floppy-only development policy. Digitised sound can eat up plenty of memory and the Falcon's highest resolution consumes 730K. Just two high resolution screenshots will fill a floppy disk - hardly a sign that the storage capacity is adequate. It's rather like owning the QE2 and yet only having a tiny rowing boat for ferrying passengers to and from the ship.

The one megabyte floppy-only Falcon is a runt of a computer. It just doesn't have the memory nor the storage capacity to do justice to the capabilities of the rest of the machine. It won't be able to run MultiTOS unlike the other models of the Falcon and the opportunities for using the higher resolution screen modes

will be extremely limited owing to their memory overheads.

However, I do understand that Atari are in a difficult situation with regard to product pricing. The new Amiga 1200 is priced extremely competitively and the continued success of the video consoles means that Atari need a low cost Falcon to guarantee sales. They can't use the same approach that worked for the ST eight years ago (i.e. start high at around £800 and bring the price down gradually) - they need a cheap version immediately to gain market share.

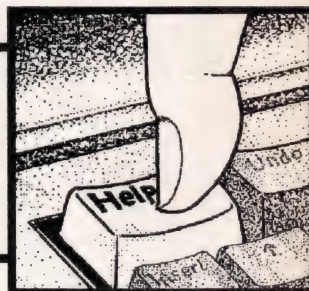
But is it worth it? If the cheap Falcon does sell well then software houses will have to target their software towards it. That means more floppy disk, run in one megabyte software - hardly very different from the situation with ST software today! Whatever happened to the idea of technological progress?

I want the Falcon to be a success. It deserves to be one. But I don't want to see the one megabyte Falcon becoming the biggest selling model. If you are thinking of buying a Falcon please, please go for one with a hard disk drive and at least four megabytes of memory. Even if you have to save a couple of extra months to afford it, you'll find that the extra versatility you get will be more than worth it.

Just think what developers could come up with if they could assume a hard drive and four megabytes of memory as the base configuration. We'd then see some truly impressive software, rather than having to put up with emaciated software scaled down to fit on a single floppy disk.



# FORUM



## Tempus

A J Waterton - Forum STA 33

**A** Tempus 2.11 has been available since March 1991, but HiSoft choose to deprive their customers from its benefits even though they cheerfully admit on the phone to using it in house!

This version has various bugs fixed from the version that HiSoft sell, but more importantly it works on large screens, OverScan on the ST, and the TT and the Falcon, but only in mono resolution and with some minor screen drawing bugs (file selector scroll bar). There are some new features for structured programming blocks and the window scrolling speed with the *right* mouse button has to be seen to be believed.

When HiSoft failed to provide an upgrade

path I bought 2.11 in Germany and translated the whole file by substitution which took about 2 days and was well worth the effort. The original English version did not take account of the keyboard layout differences with a German keyboard, but fortunately every key state may be defined in an external file which is "compiled" and saved into the program.

Tempus is the editor for any serious programming and I will never forgive HiSoft for their failure to properly support and upgrade this product.

Creative Computer Design may be contacted at: Hochheimerstraße 5a, D-6228 Eltville 1, Germany. Tel: 010 49 61 231094; Fax: 010 49 61 234389.

Tempus Version 2.13 has been released this year with no visible differences apart from new screen drawing bugs! Make sure to get 2.11.

Graham Hinton

● Latest advert from HiSoft offers Tempus 2 as a part of the HiSoft Bumper Toolpack at £54.95. Contact HiSoft on 0525-718181 for details on how to get Tempus 2 alone.

## ST Applications Feedback

**I** Having only recently become interested in computers and bought a 1040 STE I have only one complaint regarding ST Applications - not enough "beginners" articles; and what there is not lengthy enough. With the advent of the Falcon and the reduction in price of the STFMs there will presumably be a lot of 'newcomers' to the Atari and they will suffer intensely (as I and many others have done) on the learning curve necessary to acquire the basic operating skills and knowledge.

Articles I have found of great value have come from very early issues of Format, User, and Review.

Your magazine came to me as a complimentary copy, which has reaped its own rewards, and I feel this is a very good idea, but I suspect a lot of 'newcomers' would be somewhat overawed by the serious, advanced information therein. However, if there was a, let us say, 4-page (picture-based) 'walk through' on certain beginner applications I feel there would be an increase in your level of subscriptions. Other than the above point I

find very little to fault you on.

I would like to attempt some programming in the future but very few articles exist which point a relative beginner in the right direction. Could you produce an article which:

- 1) briefly explains the different languages and the applications they are best suited to;
- 2) states which are less likely to go 'out of fashion';
- 3) outlines which ancillaries you would need to program with some of these languages, i.e. Compiler, debugger, necessary reference material, etc., - and what these ancillaries do!

V Gutzu

**I** Could you include more programming stuff with a smaller percentage listings?

David Gundy

**I** I would be even more satisfied with your magazine if you devoted as much space to using music programs (sequencers, samplers, etc.) to create music as you do to using graphics and DTP programs. I would also like to see a regular section that listed readers' feedback on the various incompatibilities encountered between different PD accessories, auto programs that interfere with other programs etc. This would provide feedback for authors of programs and save some of us inordinate amounts of time!

John Stean

● You can have your say about the future of ST Applications by completing the Readers' Survey on page 56.

## ST Club Catalogue

**Q** Why not put your catalogue on disk complete with a search program?

J Rhodes

● Our 'A to Z' (£0.75) disk should help you to rapidly find any item from the main printed catalogue. We've avoided supplying the catalogue only on disk because feedback has suggested that the majority of customers prefer to browse through a printed catalogue.

**T**he Forum pages are a regular feature of ST Applications, enabling readers to exchange ideas and help each other out with problems. Whilst we attempt to briefly answer questions here, if you have additional information or ideas please do submit them for publication. What you consider to be trivial information can often be of considerable use to other readers!

Please send your letters on disk if possible. Disks will be returned with a PD of the writer's choice. Longer submissions may appear as articles, in which case you will receive payment at our standard page-rate.

### Key:

The following codes are used for each Forum entry:

J Pringle - Forum STA 20: Author who first raised the subject, and in which issue.

**Q** Question

**A** Answer

**I** General information or 'Input', advice, discussion, hints and tips, etc., with or without reference to previous Forum pieces.

● Editorial reply



Issue 14 of our catalogue will be a major departure from previous catalogues; copies will be sent out to ST Applications subscribers early December.

## Gone Away?

John Adams - Forum STA 33

L W Reynolds - Forum STA 33

**I** I have received "A Practical Guide to Write On" from Terry Freedman and all is now cleared up.

E Woodman

## Protext 5.5

Cyril Maskery - Forum STA 33

**A** If the ticket is one page long you can use the `sys_page` variable and increase it yourself with the line `.SV sys_page=sys_page+1` at the end of the document.

P.S. Does anybody know an easy way to convert Arabic numerals into Roman numerals?

David Gunby

**A** Here's a solution for the Protext 5.5 query in your September issue of Forum. I don't know of a `SYS_DATE` type variable for numbers printed so far, but it's easy to number tickets by including the following lines in the document:

```
>dp 0
>av ``How many tickets? `` number
>sv sofar.=1
```

```
>if number>8
>rp
Put your ticket design here, between >rp and
>un sofar.>number.
Ticket number: &sofar.&
>un sofar.>number
```

When you print the document, it will ask you how many copies you want, then print them out with consecutive ticket numbers. The full stop after `sofar` is important, as it tells Protext to increase the number by one each time it's used. If you want numbering to start at something higher than 1, use these commands instead:

```
>dp 0
>av ``How many tickets? `` number
>av ``Start numbering at? `` sofar
>if number>8
>sv number=number+sofar
```

```
>rp
Put your ticket design here.
```

```
Ticket number: &sofar&
```

```
>sv sofar=sofar+1
```

```
>un sofar>=number
```

**N.B.** No full stops this time, as the equations don't work with self-incrementing variables. You also get funny results if you use both `sofar` and `sofar.` in the same document. If you want each ticket on a separate page, just put the line

```
>pa
at the end of your ticket design.
```

Deborah Pate

**A** Here is a way to print tickets with serial numbers using Protext. You must use two files: a Promerge file which runs a program that loops, calling the data file which contains the form of the ticket.

Below is an example of such a file. It calls a

file "PTICKET" and prints it eight times on portrait A4. It adds the serial number each time it calls the file.

This, along with another file to print four big tickets in landscape on an A4 sheet, I make available on disk (see DMG.37). The option to print (say) six tickets down the page with serial numbers on ticket and counterfoil should now be easy. It does not have the complication of the double columns.

Maybe we could start a PD collection of Protext routines? John Blackburn has done some good work with his disk distributed to those who subscribe to Arnor's magazine "EXFILE", but about the PD status of this material I am not sure.

The Reverend Brian Elliott

## PC vs Atari

Wendy Durham - Forum STA 24

Alan Kennedy - Forum STA 24

Stephen Murgan - Forum STA 24

Gordon Carruthers - Forum STA 26

Dave Ansell - Forum STA 30

Alwyn Thomas - Forum STA 31

Bob Osola - Forum STA 31

K S Grings - Forum STA 31

Graham Curtis - Forum STA 32

**I** Last year I cancelled my subscription because I found little of interest to me in ST Applications. Since then I have toyed with the idea of getting a PC compatible, as most of my friends have PCs.

Fortunately, I borrowed a Q-Basic manual from a friend. I was horrified to find that MS-DOS is pathetic compared to the Atari TOS and Fast Basic for the Atari is much more versatile. I will stick with my Atari!

There are just two problems. My old machine, a 520 expanded to 1040, has a single-sided drive. To this I have added a Cumana double-sided drive. It would be much easier to have two double-sided ones and I think I will have to buy a more recent version of the computer. The second problem is formatting a disc so that a PC can read it. Does PC-Ditto do this, and would it allow me to read ASCII data from a PC disc?

Max Wirth

● If you have TOS 1.4 or higher then disks formatted on the desktop will be readable on a PC; otherwise use one of the utilities on disk UTI.252 to make the disk readable on a PC.

You could fit a new double-sided disk into your ST for around £50. Ladbroke Computing, Gasteiner, and System Solutions can all supply the parts you need and could do the job for you.

## A hole too many

Steven Holmes - Forum STA 32

**A** I have also encountered 720K formatted HD disks not being read by a non-HD drive at work on an Apple Macintosh. The problem

```
>>>FILENAME: A4TIC.PMR
>>>PROMERGE FILE TO GENERATE EIGHT TICKETS WITH SERIAL NUMBERS
>>>ON A SHEET OF A4. MARGINS MAY NEED ADJUSTING TO YOUR PRINTER.
>-----C-----R;
>>>RULER TO HALF PAGE WIDTH AND CENTRE TAB
>PL 66;SET PL,SM,TM,& BM TO SUIT LOCAL SYSTEM
>SM 5
>TM 1
>BM 1
>FD N;USE NORMAL RULER 10 UNITS PER INCH
>PC 2 70;PRINT 2 COLUMNS ACROSS 7 INCHES
>DP 0; SET DECIMAL PLACES TO ZERO: "SERIAL 10" NOT "SERIAL 10.00"
>SV SERIALNUM=1;SET START SERIAL NUMBER HERE
>RP; REPEAT - ENTER A LOOP
>IN PTICKET - CALL FILE "PTICKET" - FULL PATH MAY BE USED
>>>"PTICKET" IS PRINTED AND THE SERIAL NUMBER
>>>IS ADDED WRAPPED IN BLANK LINES
```

```
[FONT CODE ON] SERIAL NO. &SERIALNUM&. [FONT CODE OFF]
```

```
>SV SERIALNUM=SERIALNUM+1;ADVANCE SERIAL NUMBER BY ONE
>UN SERIALNUM=17; SET THIS "UNTIL" COMMAND TO ONE
>>>MORE THAN THE REQUIRED NUMBER OF TICKETS
```

Here is the data file:

```
>>>TEMPLATE TO PRINT EIGHT TICKETS ON AN A4 PAGE
>>>MAKE SURE TO TURN OFF ALL PRINTER CODES YOU TURN ON
>>>THIS EXAMPLE FOR A LASERJET III OR COMPATIBLE
>>>NUMBER OF LINES IS CRITICAL FOR DOUBLE COLUMN ALIGNMENT
>FD N
>-----C-----R
```

```
[PR CODE ON] THIS IS
```

```
[CODE ON]A NICE TICKET[CODE OFF]
```

```
DO COME AND SPEND
```

```
LOTS LOTS LOTS
```

```
14 LINES [PR CODE OFF]
```



can be overcome by covering over the second hole with tape or a portion of disk label – always making sure that this is well stuck down to prevent its falling off inside the drive.

Chris Odell

**A** It's nothing to do with the extra hole in the HD disk, it's just that some drives can't cope with the finer tolerances of HD disks. My internal Mega ST drive could never read HD disks and gave errors on DD disks formatted and written to on a HD drive. Needless to say, I have now fitted a HD drive.

Mark Baines CIX #796

● Many Mega ST internal drives couldn't cope with anything less than high quality branded disks.

## Fujitsu DL Ribbons

Jon Marsh – Forum STA 30

**A** I have a Fujitsu DL 900 and have never experienced any problems with printouts becoming faint so soon after installing a new ribbon. In fact, after a year (although of not very hard use), the printer is still wearing its original ribbon and printing strong solid blacks in graphics mode. I would not dare to guess at what the problem is, but if Jon Marsh wants, I could send him some ribbons for him to test.

Fujitsu DL printers have been quite successful in Spain, and are fairly widespread (mostly attached to PCs). There's no problem here at all with spares. My address: Luis Amor, Belianes 9, 28043 Madrid.

Luis Amor

## MIDI to Analogue

## Mechanical Decoder

Alan Barnes – Forum STA 32

**I** Alan asked if there was any device that would translate MIDI into a mechanical output. In August last year a firm called Switchsoft advertised a device for the ST allowing up to eight outputs for controlling motors, sensors, and even mains switching. No doubt it does not have enough outputs to control the punch for each note of a piano roll writer, but it is a start and may ultimately lead Alan to his goal.

Switchsoft's address is: 26 Ridgeway, Darlington, Co. Durham, DL3 0SF; and their telephone number is 0325 464423.

Fred Fee

## Printmaster and Deskjet

B D Haver – Forum STA 32

**I** I enclose a couple of examples of what I achieved after just ten minutes with the FX80

Emulation Cartridge, my DeskJet 500 and Printmaster. The printouts are not the best quality I have come across but there again Printmaster is not exactly a Desktop Publishing Program either.

I can also confirm that the Thinkjet driver supplied with my version of the Program does not work on the Deskjet 500. All that happens is that Hearts and Smiling faces, etc., are printed out in rows and then the printer just throws out page after page of blank paper until it is turned off.

However, using just the Standard set up of the DeskJet 500 and the FX 80 Emulation Cartridge I had no problems in producing the sample printouts. Possibly B D Haver does not realise that the DeskJet 500 must be turned off and on again for the Cartridge to be recognised. (The printer should be turned off before inserting the cartridge anyway.)

This could mean that he/she is still printing direct in DeskJet mode with a FX 80 Driver. Alternatively it is possible that he/she has not installed the correct driver via the printer set up options. This ensures that the correct driver is in the set up Folder when the program is asked to commence printing.

Andy Taylor

## Address 1.6

Peter Crush – STA 32

**A** For UK-only use, addresses do not need to use "COUNTRY" so this option can be used to "SORT" the data. Copy all, or the first few letters, of the surname to this box and "SORT" on "COUNTRY".

I found it impossible to Delete a complete file using the "Delete Whole" option. It was possible by highlighting the file and accessories from the Desktop and dragging to Trash in the usual manner.

A very good programme at a modest price and your article was right at my level of comprehension. Thanks!

Cliff Fletcher

● The 'Delete whole' option should not delete the data files from disk – it simply removes all entries from them leaving empty data files on the disk.

## Calamus User

A W Woolcock – Forum STA 31

**I** I read with interest your question "Calamus User Newsletter". I too paid for a year's subscription, received just one copy, and am now unable to contact them. I noticed the editorial comment, that they would investigate the situation (awaiting further comment).

I should like to contact other Calamus users to form a loose self-help, correspondence link-up if practical. Please contact me if interested. No money involved.

My address is: 37 Shelford Road, Radcliffe-On-Trent, Nottingham NG12 1AE. (0602) 333303.

Bob Yates

## DMG.36

**Q** When I received my copy of the Magazine Disk DMG.36 I was rather disappointed to find that the customary text file giving very useful information upon each file was missing.

I would be pleased if you could assure me that you have not decided to dispense with this facility. I have a binder with each of these to date which makes both interesting reading and a quicker way of tracking down the required file than investigating each disk.

If you could supply me with the missing file I shall be the happiest chap in Gloucestershire!

John B Brawn

**Q** The usual ASCII file of disc contents is not on DMG.36. Although this gives the disk the added interest of mystery, I hope this is a one-off error and not a new policy?

Colin Fisher-McAllum

● Yes, sorry, read-me files will return with DMG.37.

## Typeface Design

## Competition

**I** I noticed the following competition mentioned in the August issue of Artists' News-letter.

*International Typeface Design Competition*

Who: open to all

What: categories – Latin, Kanji

Award: Awards totalling 17 million Yen

Information from: Morisawa Awards 1993, International Typeface Design Competition, Morisawa & Co Ltd, 2-6-25 Shikitsu-Higashi, Naniwaku, Osaka 556, Japan. Tel 81-6-649-2456; Fax 81-6-649-2154.

Matthew Carey

## Spectre and HD Drives

**Q** I would like to ask for help from anyone who has managed to set up and use Spectre GCR on a Mega STE. The first problem is that the original lead from the cartridge to the floppy drive port is too short – by about 3". Having given up trying to make one (my soldering skills are just not up to the 28 joints required to attach the plugs to the cable), I decided to take the easy way out and buy one. After three unsuccessful calls to HCS of Croydon, the original suppliers of my Spectre cartridge, and calls to five other suppliers, including an offer to make one up for me for £30.00, I ended up buying a cable two metres long.

I expected some trouble using this as I am aware that cable length can be crucial in data transfer. I was pleasantly surprised as nearly all software, data, etc., loaded without too much trouble (although some disks needed to be accessed twice before they could be read). The only real problem I have encountered is in



trying to read HD disks on my HD drive - it just does not pick up anything ("Do you want to format this disk?" etc.). Is it the cable length or the disk/drive combination? Has anyone else had similar problems and overcome them? If so, I would dearly love to hear from them.

Chris Odell

## Imagecopy

**Q** Imagecopy 2 has already earned its keep - converting our new College logo into a file I can use in FSP3 (with a little help from a Mac running Pagemaker 4.2 and a 486 PC).

Here's a challenge for Jeremy Hughes. How about Imagecopy 3 being able to load EPS files (from a Mac disc?), display information on size, etc., allow it to be rescaled and then saved to IMG or TIF format?

D R Burrige

● Conversion of GEM metafiles to bit-mapped formats such as IMG and TIFF is already on the wish list for Imagecopy 3. Extending this feature to handle EPS files will be straightforward. Imagecopy 3 should be available early next year.

ST programs can only read files from Apple Macintosh format disks with the aid of a hardware add-on such as Spectre GCR; but now that most Macintoshes can write to PC-formatted disks you should have no problems getting EPS files from a Mac to an ST/TT/Falcon via DD or HD disks.

**Q** I haven't been able to use Imagecopy version 1 with APL 68000 level II - do you know if anyone's worked with that combination?

J Shaw

● No. As far as we know APL is no longer supplied for the ST, so it is difficult to obtain a copy for testing Imagecopy with.

**Q** I have a problem with Imagecopy, or perhaps a misunderstanding. Should I be able to get a printout using my HP DeskJet 500 in portrait configuration, where the printout would need two pages because the picture is taller than the page?

I get the first page printed correctly, but the second page prints about one inch of graphics, then ejects the page, and prints the rest of the graphic on the third page.

Does anyone know if I am wrong in expecting any other result than this, or am I doing something wrong.

K L Yull

● Imagecopy does not yet 'tile' printouts to print images bigger than the paper size in your printer. If you want to print images on more than one page then you will need to wait for Imagecopy 3. (The Print Options dialog in Imagecopy does allow any size of page to be set and you could have luck with setting up a printer to a taller size page and feeding the

printer the pages pasted or taped together. Take care: glue and paper feed mechanisms rarely mix well; it may be safer to cut down an A3 or A2 sheet of paper.)

You may be able to scale your image so that it will print on an A4 page by increasing the print resolution; or with Imagecopy 2, you can scale the image to any size that will fit on the page.

## Kaosdesk

**Q** Kaosdesk looks fine but I can't seem to get any printed output using the printer icon to print files even after using the control panel to install the 9-pin printer. Anyone have any ideas?

John Stean

## New Word

**Q** Newword.Acc (also known as Word 400) has been much praised in various publications. However on my 2Mb STE (TOS 1.62) I have found that I can rarely get a boot disk with this program on to install itself. I usually get left with a blank white screen and have to reboot from another disk. This happens even when it is the only accessory. Has anyone else experienced this problem?

John Stean

## Overscan

**Q** I have recently fitted the Overscan graphics extender to my ST and find that when I now run FastCopy PRO I no longer get the track display at the top of the screen whether Overscan is active or not. The program does run though without any problems and all other sections of the screen display work and are displayed correctly. Whilst this is not a major problem, it does mean that I cannot see if any errors occur during format or copying etc.

I have had some problems with other applications when running with Overscan active, the usual result being a scrambled screen, or the odd mouse area not being redrawn, but this has only been with PD programs so far. With the system re-booted and with the Overscan hardware disabled (Control key held down during re-boot) the vast majority of these then seem to function okay. FastCopy PRO seems to be the exception. However, as it will obviously take some time to run through every application that I have at present I cannot offer you a listing of the good and the bad or other exceptions like FastCopy.

To avoid these compatibility problems I am working on fitting a bypass switch to replace the RTS ground detect disabling switch. When this project is complete I will look to sitting down and writing a report/review on this generally useful item.

Let us know if you have any ideas or possible reasons for this quirk, or maybe even have the answer.

Colin Field

## 550C and PageStream 2.2

**Q** I am desperately trying to get hold of a printer driver for use with an HP550C and PageStream v2.2. I have been using the HP500C driver but I can't get true black unless I go through with the paper twice and print the black separately.

M W Anderson

● Latest PageStream printer drivers can be ordered from the UK representatives of Soft Logik on 0628-784006. They do not offer a technical support service but should be able to advise on the availability of a suitable driver.

## Speedo Fonts

**Q** Does anyone know where you can get individual Bitstream Speedo fonts? A few companies are offering packs at about £60, e.g. Hisoft, but I only would only use one or two fonts out of all those offered in these packs.

Phil Hodgkins

● Bitstream can be contacted on 0242-227377 and should be able to supply details of their full product range and dealers. You'll also find adverts for Bitstream fonts in PC magazines.

## Clip Art Catalogues

**Q** Are there any plans to provide a catalogue of recent SSM series Clip Art disk please?

John B Brawn

● We didn't have any plans. But if anyone is interested in preparing a catalogue of these clip art files then we would be interested in hearing from you. Please send details of the hardware you plan to use, timescale you could work to, and some examples of your DTP work. Payment would probably be a small advance then royalties on each catalogue sold.

Similarly, we would be interested in hearing from anyone interested in making catalogues of the contents of our PageStream, PostScript and Calamus font disks.

## Blackwater BBS

**I** Hi Folks! Why not try out the Blackwater BBS run by Atari Workshop/System Solutions. The number is 081-299 3933.

T Campo

## Tempus and LaserJet

**Q** Does anybody know the exact ESC sequences for the HP Laserjet? The ones needed for Tempus printer formatting are:  
Orientation: ESC&l # O



Spacing: ESC)s # P  
 Pitch: ESC)s # H  
 Point size: ESC)s # V  
 Style: ESC)s # S  
 Weight: ESC)s # B  
 Typeface: ESC)s # T

where # is the argument. But I need to know the exact structure, i.e. binary or decimal ASCII, start from zero or start from one, etc. I am using an Epson GQ3500 with Laserjet emulation card and, needless to say, Epson don't know either. When are estate agents going to stop selling computer products?

Graham Hinton

## User Groups

**Q** Can anyone help please with contact names and addresses for any ST user groups in the Hampshire, Dorset and South Wiltshire areas?

Sarum Sound

● Details of any Atari user groups will be most welcome: we'll give publicity via ST Applications and our catalogue to any groups, active or just starting up.

**Q** I am a practising dentist who uses an ST for general purpose work in my Practice. I mainly use Protext 5.53, PageStream 2.2 and LDW Power for day-to-day work and I am in the process of converting my recall list to Address 1.6 from the ST Club.

If there is anyone else out there doing the same then perhaps they would like to get in touch with me to share some ideas and give mutual support.

I also have a (truncated) copy of the DPF transcribed onto a Psion Series 3 pocket computer and don't mind sending a copy to anyone who sends me a Psion flash card or a blank disk with a SAE.

P G Laurie

## A Boy, a Press, a Bird

### and an Atari!

**I** It started many years ago, when I was just twelve years old. My school had a Model Railway club, and somehow I was made editor of the club magazine. It was just a small A5 duplicated effort, with a few horrendous free-hand line drawings and a bit of a logo on the front, and some equally dodgy articles badly typed up by me from schoolboy scrawl submitted by scruffy urchins who attended the boisterous weekly meetings of the club. However, even then I was fascinated by typewriters and printing presses, and many hours were spent playing truant from lessons mucking around with the school duplicating machine in the secretary's office!

This interest eventually found me a job, working for the local newspaper, mainly in the circulation department, but also being responsible for the manual ledger accounts (no com-

puters then!) and more importantly, at least for the town's horse racing fraternity, I typed up the latest race results sent down the wire from head office onto a stencil sheet which was then put on a Bush Stop Press machine. This mammoth beast required much ink and oil, and I spent grimy hours underneath it, looking after its every need and want. Eventually, the newspaper was computerised in all departments, from page make-up to accounts, and my job changed and then disappeared.

Rather than remain a glorified delivery boy, I headed for pastures new and a job with an Israeli radio station called the Voice of Peace. This station broadcast all kinds of music and peace propaganda from a rusty old tub anchored off the coast of Tel Aviv. On shore however, there was all new technology, and I spent many happy hours, when not doing onshore promotion work for the station, playing with the office computer, which could do all sorts of interesting things, such as printing letters to listeners in Hebrew or English, allowed you to look into the Chief DJ's wage agreement (he got more than me!) and a mass of other things. That settled it: when I eventually returned home I would get a computer.

A year or so later, I climbed aboard another radio ship, the infamous Radio Caroline this time. Anchored in the cold and rough North Sea, they too had a computer, a Sirius, if I remember correctly. I was soon compiling the news bulletins, usually ripped off the teletext, but my major interest was in compiling a weekly newspaper for the staff onboard. It was full of gossip on the pop stars, the station staff, and details of the latest records which were to be played. The mag went down well with the staff, and once I came ashore permanently, I did a deal with a fellow staff member and swapped him an audio mixer for an ancient 520 STFM, and promptly started up a radio news and gossip newsletter.

I was in publishing at long last, though to start with I only had First Word Plus and Degas to do wonders with, but the success of the newsletter enabled me to splash out on Timeworks and a few disks of clip art.

I so enjoyed doing the typesetting and layout of the publication, along with the advice and encouragement given by articles in the ST Club Newsletter and latterly ST Applications, that I decided it might just be a real career for me, eventually. But I would need proper training and help, so it was back to school for a year, even if it was just one evening a week!

I have now just successfully completed a City & Guilds Level II course in DTP, and although I learnt a lot, I still feel I have learnt more through the pages of STA! It's a credit to the magazine and the authors of the articles on DTP, that a complete beginner in computers a few years ago is now able to actually advise other people on the subject!

My college course involved using a Macintosh and Pagemaker 4.2, my first experience of that machine and that exalted programme. However, I was able to get on producing stuff very quickly owing to the Mac's similarity to the ST. The rest of the class spent some weeks just mastering the basics of actually using the

machine. Anyway, I don't want to really go into that area. Suffice it to say, the Mac is a nice machine, but not worth the money being asked!

Back to the ST and DTP. Well, for the past few years I have used Timeworks 1.12, and it has been a good workhorse, rarely letting me down, and quite capable of producing the now monthly glossy radio magazine I co-edit. However, I have now been asked to produce another magazine, which will require more frequent changes of typefaces and sizes than Timeworks can easily handle. The ability to rotate and resize text is missing from Timeworks because of the limitations of GDOS, and there are many other features I now wish to use in my magazines, and which are simply not available in the program. I had looked forward to Easytext Professional, and I bought a copy as soon as it was released. Unfortunately, it did not live up to expectations, though to be fair most of its drawbacks are due to GDOS.

So, the time has come for me to look at what is available elsewhere. In times gone by, I would have immediately opted for Calamus, only the £400 price tag stopped me from buying it! Just as I was taking advice on Calamus from John Charles, the author of JCView, JCLabel and some other highly usable and original programmes, a mailshot arrived from the distributors of PagePlus 2, the up and coming DTP programme for PC's. It has full colour capability, just about every other feature a DTP program should have, and a totally amazing price of £60! Extra fonts and utilities could be bought together with the main program for under £100.

This was a whole new ball game, as even the cheapest ST colour DTP programme (PageStream) costs a lot more, and was reportedly not so hot in various departments. In addition PagePlus would be fully supported in the UK, unlike PageStream where you have to call the States! I rapidly weighed up the costs of buying a cheap PC set-up just to use this programme!

However, after quite a lot of soul searching, and accepting the fact that I really couldn't splash out £900 on a PC hardware set-up, I opted to stick with the ST. So, thoughts once again turned to Calamus. The new SL and S versions were way above what I could afford, but the far older 1.09N version was definitely affordable at the £99 price quoted by the new distributors JCA Europe.

I am now the owner of this package, and slowly, but surely, getting the hang of it. Much help and advice has come from John Charles, Günter's articles in STA and the loan of John's copy of David Waller's "An Introduction to using Calamus on the Atari ST". The manual supplied with the program is not so clever or helpful. The information is there, but you can't find it - the lack of an index doesn't help!

Calamus so far has generally lived up to my expectations, but has also immediately shown me one of its weaknesses, the poor quality of output with text sizes below 12 points. This does cause problems as most of the work I do utilises 7, 8, 10 and 12 point text. I will be able to work around the problem



when doing A5 work, by doing the original at A4, and using larger point sizes, then having the printer reduce the finished original prior to printing. However, I can see me using Times for certain jobs. Jeremy Hughes's Century typeface is excellent at small sizes, and far better than the Calamus body text faces supplied with the package.

And now for the future, well I have spent a few thousand pounds over the last few years on my ST and peripherals. I own many of the top packages, and also have a sizable collection of PD. It would be a great shame to abandon the ST for the PC or Mac, but like Gunter, I too have a feeling that the time may come when I reluctantly head off into the world of Windows and memory-hungry software.

I, like many, have waited with baited breath for the Falcon to make an appearance. I know you can buy them, somewhere, but not in Sheffield (well, it's only the fourth biggest city in the UK!), they are too expensive for the perceived market, and worse still, come with a small memory, and if you are really lucky, a 80 MB hard drive. Pathetic really – a scanned image alone takes up a megabyte or three, and even a small Calamus document barely leaves much space for working on in my 2.5MB of memory!

Atari, as usual, have messed it up. The Falcon is being touted as the all singing, all dancing wonder machine, but even though the idea and design are basically sound, the implementation is dreadful. It's just like fitting a Rolls Royce with a two stroke 100 CC engine! Of real concern to me, is that in all the mentions of software for the Falcon, there has been no mention of a DTP package being developed especially to make use of the built-in clever stuff. Nial Grimes hoped in his review of Calamus SL in issue 29 of STA, that it would run on his Falcon. It would have been nice for Nial and the rest of us to know that if we bought the program now, it would run properly on the Falcon in the future. This is the sort of question Atari or DMC should have been able to answer easily. Unfortunately, it just goes to show that Atari don't really talk to developers, even though there were signs about a year ago that this situation was changing for the better. But we hear that many of the clever and dynamic people within Atari worldwide are leaving to go to other firms, maybe because there someone will actually listen to them!

The re-released 520STFM, of great interest to me, because that was my machine until Paul Rossiter upgraded it, would have been a good seller if it had been fitted with a memory board that could have been easily expandable. And if it had stereo audio, because like it or not, potential buyers of today like their sound, it could have kept the Atari ST name alive with the youngsters. To prove a point, the home shopping catalogues such as Kays and GUS used to sell both the 520 and 1040 versions of the ST. Used to, I say, because the latest editions have no ST's in them, just Amigas and low cost PC's! If Atari UK had any idea about marketing, these catalogues would have been an ideal place to sell the re-launched STFM. In today's economic climate, these catalogues survive because they allow people to buy luxury items now, and then pay

for them over a relatively long time with low repayments.

Finally, I shall end with a plea to Atari UK and the men in California: Listen to your loyal customers, really read what is said in STA, ST Review and on the boards and for goodness sake let the ST and Falcon developers know that YOU are there, and have a real interest in what they are doing, because ultimately it is in YOUR interest to do so!

Mike Kerslake

## Using ASM in Sozobon C

**Q** Can any fellow ST'ers help me out with the methods (sic) that are required to use Assembler within C? I know about the use of #pragma, but cannot figure out how you pass parameters to/from the Assembler code and the C code/functions set up. Basically I have some assembler code for setting up a ram disk. Therefore my application would set up a ram disk and copy its intermediate files to the ram disk for subsequent processing, unless someone has got a C hack for setting up a ram disk.

C Tillotson CIX #499

## Who Gives a TOS?

Paul Rossiter – STA 31  
Mr Hellawell – Forum STA 32

**I** I am reminded of a similar experience I suffered at the hands of a Blitter chip I tried to install in my old STFM. It's just a little anecdote which offers nothing but a little empathy!

Despite, as Mr Hellawell did, checking every solder joint and every track from the CPU to the BLitter, I only once managed to persuade TOS that there was a BLitter on board.

Neither Paul Rossiter, who had supplied the chip, nor I could come up with any cogent reason for the machine to fail to recognise the BLitter except for the presence of a QL-emulator board which the machine contained. Maybe, as with Mr Hellawell's SIMM board, this was just sufficient to push the computer's tolerance limits over the edge.

At the end of the day, I left the BLitter on board and eventually sold the machine to finance the purchase of my Mega STe (with which, like virtually all other owners of this too-quickly dropped machine, I am very happy!). It neither added nor detracted from the operation of the computer, but it was annoying to have done so much soldering for so little reward!

Ian Braby MRPharms

## DataLite

**I** HiSoft's announcement of DataLite, a disk space doubler, must have brought hope to anyone who, like me, had a hard drive that was already creaking at the seams. So I must have

been one of the first to order, and in due time the package crashed through the letter box to be ripped open and installed in my Auto folder.

Sadly, all was not rosy. Although the computer booted up with no problem, two drawbacks immediately surfaced. The first, and one that will be fixed by the time you read this with a software update, was that I was unable to access any of the functions when run from NeoDesk, a dialogue box complaining that DataLite's XBRA vectors had been lost. The second problem was that I was completely unable to access either A or B drives without the ST crashing completely.

After a call to HiSoft's Helpline, we established that the most likely cause of the problem was that my hard drive, a Power Computing Power Drive 900 48 Meg unit, did not have the required Atari AHDI compatibility and that the only way round the problem was to reformat and repartition the drive with Atari's installation software, a copy of which I was sent.

This attempt failed as Atari's program flatly refused to format my drive, complaining of poor connections. After a good deal of messing about I was finally able to load DataLite and access both floppy drives by putting both it and the Atari hard disk driver program into an Auto folder on a floppy in drive A, booting from it rather than the hard drive by switching off its auto boot feature. Although this seemed to work OK it wasn't the most ideal of situations. Firstly the boot up procedure took much longer as the Atari driver took ages polling for Acsii devices before giving in, and secondly because I could no longer access any partitions higher than 4.

Another call to the HelpLine produced both a refund and some further information which I will produce in the conclusion.

So what went wrong? Apart from the NeoDesk incompatibility, a minor matter with the promised update, the reason that I wasn't able to get the required AHDI compatibility was that my drive was fitted with a GE Soft interface, which would not respond to the Atari installation software. Later versions of this drive have ICD interfaces, and the ICD software works fine with DataLite.

So, if you have a Power drive, check first which interface you have – it will be obvious from the installation software. If it is the GE Soft one, then you will be able to run DataLite but with the restrictions outlined. Alternatively I understand that ICD produce a version of their installation program that will run on any drive not equipped with their interface, and this should produce the required compatibility.

Derryck Croker

## Diamond Edge

Michael Baxter – STA 31

**Q** In the previous issue of ST Applications there was an interesting article on Diamond Edge. The article suggests that this utility can be used only for hard disks. I do not have a hard disk. One feature of this utility that particularly interests me is the fragmentation map



display and associated optimization algorithm. Is it really true that this utility can only be used on hard disks? I would very much like this kind of utility to tidy up some of my floppy disks.

P R Fisk

● The simplest way to de-fragment a floppy disk is to move all of the files to a blank disk; or if you want to keep the files on the same disk move the files to a RAM disk and then back to your floppy disk. Keep backups though as a power failure while the files exist only in the RAM disk would be unwelcome.

Remember that files will only have been fragmented if they have been written to since you last de-fragmented the disk. Keeping the system clock set correctly will allow you to minimise the time taken to do the job.

## Programming Problems

**Q** I would be grateful if you could cover the GEM font format in a future programming section of an issue – or is it possible that you have already covered this in a past issue? I am not just interested in 'legally' getting information about a font's size and real name but also using it in assembly with GDOS loaded. Hopefully this will also work for Speedo. OK, so that will need no real 'file format' info but I still need to know about bitmap GDOS file format for conversion to simpler 8 bit computers and other general routines. This information would also be of use to any programmers thinking of putting nice fonts into games and other utilities without needing GDOS loaded. Do you sell any books on GDOS programming?

ST Review did a great section on the ASSIGN.SYS file which taught me quite a bit but it still doesn't make using GDOS easy. Why do I get strange blobs instead of readable text in medium resolution when I use GDOS programs? GDOS is a great idea and could make all the difference in programs if only there were some easy way for everyone to use it.

Your section on the IMG format would have been much more useful if you had given us details of the new XIMG format. Do you know where I can get any information on the XIMG format, if you are unable to put a section in the magazine?

Mat Waller

## RSC Anal

**Q** I have been in communication with Mark over RSCANAL which in my hands sometimes stops (Run time error 28) while reading the RSC file. For various reasons Mark is unable to help; have any of your readers or yourself had trouble with this program or know of a fix? It is too useful a program to give up on. If you cannot help, do you know where I can find details of the format of GEM.RSC files?

E G Richards

## Pamphlet

**I** A small tip to do with the HP printer utilities HPDESK2E.ACC and HPDESK2E.PRQ on disk PTR.16. The text file that is with the programs has no info about the Pamphlet option.

In Pamphlet mode 40 lines are printed per page (a page being half A4 in landscape mode), but text at the end of the document that you are printing is missed out. The cure is to put 66 extra returns at the end of your file. This also applies to a program called Booker on this disk.

Iain Carr

## Midi Aware Screen Saver

**Q** I would like to find a screen saver program suitable for use with a sequencer screen and which would not swing into operation whilst midi input or output was taking place. It is inconvenient to have to keep moving the mouse every so often when listening to a song being replayed. Any suggestions please?

John Stean

## Long SCSI Cables

**Q** I have an old 22MB Third Coast hard drive (Seagate disk) which I have upgraded by installing a 105MB Quantum disk using dual

power and SCSI cables. This set up works for about a week, then the drives suddenly start to give read errors and I can only get the system to work perfectly by using a single SCSI cable and one disk drive (the 105MB Quantum, which is the boot device). The dual SCSI lead is quite long (52 cm + the length of the additional connection) while the single lead is only about 7cm. I have 2 dual leads and they both start giving errors after about a week of use, so I don't think the leads are faulty.

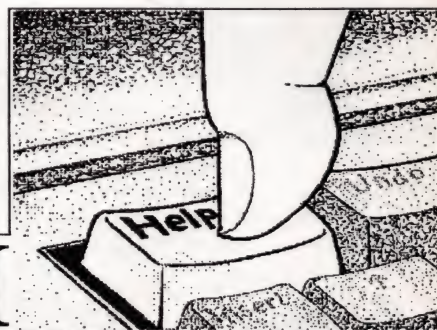
Can anyone tell me if these errors probably occur because of the length of the dual SCSI's and is it advisable to shorten the long cables?

Paul C Forbes

## Ram Disks

**I** Sequencer One Plus works well from within a Ramdisk. I am now using RDE to make a large autobooting Ramdisk and using a patch editor/librarian program which also sits in the ramdisk. As a result even without a hard drive it is possible to switch (almost) instantly between the two programs and the desktop.

John Stean



# FORUM

## Wiltshire (Bristol)

**I** Nothing to get Jonathan Ross gurgling, but the latest promotional newsletter from the company that prints ST Applications every month contained the following snippets:

- Wiltshire (Bristol) Ltd's 22-unit Goss Community Press, measuring over 60 metres in length, is reputed to be the longest of its kind in the world!
- The bindery at Wiltshire (Bristol) Ltd holds the record for stitching the thickest weekly A4 magazine – up to 404 pages – so far!
- Wiltshire (Bristol) Ltd's current usage of paper adds up to a grand total of 300,000 kilometres of paper a year – enough to encircle the Earth seven and a half times!
- One of Wiltshire's principal paper suppliers consistently plants two trees for every one that's felled for making paper.
- Every week, between 7pm on Tuesday and 7pm on Wednesday, over one million magazine sections are stitched, packed and despatched from the bindery at Wiltshire (Bristol) Ltd!



# Mouse Master

**We are now the UK  
distributors for the Gemulator  
ST emulator for IBM  
compatible PCs. Write or  
phone for information sheets.**

**The ST Club**  
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# Run ST software on your PC!

<div>MOUSE MASTER</div>											
<div>Programmed by Peter Topping (c) 1992 V.1</div>											
1	2	3	4	5	6	7	8	9	10		
F. KEYS				SHIFT+F.KEYS				KEYPAD			
<div>Start Rec. Stop Rec. Extend Seq.</div>											
Delete Seq.				Del. last				Delete All			
Options				File Op.s				Info.			
View/Edit				EXIT				Disable			
Speed Mouse								Copy Seq.			

<div>MOUSE MASTER OPTIONS</div>		
<div>Keys used to record events (1-8)</div>		
F. KEYS	SHIFT+F.KEYS	KEYPAD
<div>Pause (1/50s) for sequence 1 : 15</div>		
<div>Acknowledgement alerts YES NO</div>		
<div>Warning alerts YES NO</div>		
<div>OK</div>		

**Mouse Master** allows mouse operations and commands to be recorded in the computer's memory and replayed at the touch of a key just as if you were moving the mouse. This overcomes the need to break your train of thought by stopping what you're doing and laboriously making the mouse commands which you use often. Ten different sequences of mouse instructions can be held in memory

at the same time - each containing up to 100 commands, or 'events' such as clicking, double clicking and dragging.

Mouse Master can be used with any program which uses the mouse, though most of the package's facilities are available from a Desk Accessory, so it is best used with GEM based programs or the desktop.

**£9.95**

**The ST Club**  
2 Broadway  
Nottingham  
NG1 1PS  
Phone (0602) 41024

**Comprehensive  
printed manual**

# X-Debug

## Advanced Debugger for Atari ST/TT computers

X-Debug is an advanced debugger for the Atari range of computers. It is both a low-level debugger, showing memory dumps and register contents, and also a medium-level debugger, understanding about certain high-level languages and allowing source display single-step, and local variable access, for example.

The best support is for Lattice C, as that is the only compiled language that outputs full debug information, but it also supports line-number debug (as created by HiSoft Basic and Devpac 3), and symbol-only debug (usable with virtually all ST compilers).

Crucial to the whole debugger is the X-Debug language. This is a simple yet powerful script type language that allows complex operations to be built up from a sequence of standard operations. It supports a full expression evaluator, aliases, and procedures with parameters. It is also an important factor in customising the user interface, allowing specific commands to be attached to particular keypresses.

X-Debug runs on STs and TTs with any monitor type. One megabyte of RAM is recommended, and TOS 1.4 or later avoids problems with larger programs. Written by Andy Pennell, the creator of MonST.

**£24.95**

**The ST Club**  
2 Broadway  
Nottingham  
NG1 1PS

```

00000000 68020 Registers
01:00000000 00:00000000 e00020>
02:00000000 01:00000000 move.m %$2700, sr
03:00000000 01:00000000 e00024>
04:00000000 02:00000000 reset
05:00000000 02:00000000 e00026>
06:00000000 03:00000000 cmpl.i %$52353f, $fa0000
07:00000000 03:00000000 e00028>
08:00000000 04:00000000 bne.s %$004c
09:00000000 04:00000000 e0002c>
10:00000000 05:00000000 jmp %$0004(pc), a6
11:00000000 05:00000000 e00046>
12:00000000 06:00000000 lea $fa0004
13:00000000 06:00000000 e00048>
14:00000000 07:00000000 move.l %$0006, d6
15:00000000 07:00000000 e00052>
16:00000000 08:00000000 movq %d6, %d0
17:00000000 08:00000000 e00056>
18:00000000 09:00000000 moveq %d8, %vbr
19:00000000 09:00000000 e0005c>
20:00000000 0a:00000000 move.l %$0024, t0
21:00000000 0a:00000000 e00064>
22:00000000 0b:00000000 move.l %$0014, t1
23:00000000 0b:00000000 e0006c>
24:00000000 0c:00000000 btest %0, $fffffee09.m
25:00000000 0c:00000000 e00074>
26:00000000 0d:00000000 bne.s %$0004
27:00000000 0d:00000000 e0007c>
28:00000000 0e:00000000 lea %$0004(pc), a6
29:00000000 0e:00000000 e00088>
30:00000000 0f:00000000 bra %$0004e
31:00000000 0f:00000000 e00094>
32:00000000 10:00000000 bne.s %$0006
33:00000000 10:00000000 e0009c>
34:00000000 11:00000000 move.l %$424.m, $ffffd81.m
35:00000000 11:00000000 e000a6>

X-Debug 1.00 by Andy Pennell

MonST-emulation script installed OK

```

[illegible]

```

001: 168030 Registers
002: 010108157A A0:00000000
003: 0101081F78 A0:0000002A
004: 01000000F0 A2:00108210
005: 0101081F74 A2:01081F50
006: 0400000000 A0:01176554
007: 0500000000 A0:01123662
008: 0700000000 A0:01157550
009: 0700000000 A7:01156365
010: 5A:2324 S13 xnzvc
011: PC:010E909E A7:01178444
012: jsr -init_diss
013: F1F7F7E4 41F7 F7F2
014: 00000000 1 Memory
015: 00000000 607E 0201 0000
016: 00000000 000E 0030 0000
017: 00000000 010F 0360 0A00
018: 00000000 010F 0260 0A00
019: 00000010 010F 0260 0A00
020: 00000014 010F 0260 0A00
021: 00000000 000E 0030 0000
022: 00000000 010F 0360 0A00
023: 00000000 010F 0260 0A00
024: 00000000 010F 0260 0A00
025: 00000000 010F 0260 0A00
026: 00000000 010F 0260 0A00
027: 00000000 010F 0260 0A00
028: 00000000 010F 0260 0A00
029: 00000000 010F 0260 0A00
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```



# Programmers' Forum

*In this month's edition of ST Applications' regular programming column, we take a second brief look at reset-proof RAMdisks, and explore the operation of the Falcon serial port.*

## Reset-proof RAMdisks

In the *Programmers' Forum* of STA24, we looked at reset-proof RAMdisks. The article included some fairly simple-minded code that generates a reset-proof RAMdisk by fooling the system into thinking it has less memory than it really has. This mechanism requires a warm reboot as part of the installation procedure.

The article prompted the following question from Alan Kennedy:

*Your lucid explanation of how reset-proof RAMdisks work gave me that warm feeling that I understood something at last. Then I thought, hang on, I understand why a warm boot is necessary to install the RAMdisk, but what about MAXIDISK or Mortimer which don't reboot?*

This is interesting. I've had a look at MAXIDISK, and it doesn't seem to do anything particularly exotic. The program places the RAMdisk data above `_phystop`, having first moved the screen down in memory. I think that it does some clever manipulation of the GEMDOS memory management to ensure that the RAMdisk data is safe, and to put the screen memory just below `_phystop`. The algorithm might look something like this:

- Calculate how much memory is needed for the screen and the RAMdisk. We will want this to reside at the top of memory.
- Determine how much free memory there is.
- Allocate the difference between these two figures - call this Block A.
- Now allocate all remaining memory, which will begin at the address you want, and

contain the new screen and the RAMdisk - call this Block B.

- Free Block A.
- Update the `_phystop` value to lie at the boundary between the new screen and the RAMdisk space.
- Move the screen down, by copying the data and then updating the video pointers.
- Set up the RAMdisk space in the upper part of Block B, above `_phystop`.
- Terminate and stay resident using `Ptermres()`. The allocated Block B will also be retained.
- If there is a warm reset, the updated `_phystop` value will take effect, just like in the STA24 RAMdisk. All the program needs to do is to reinstall the `hdv_` pointers, and it's back in business.

This is actually a much more elegant algorithm than the one involving a reset. Furthermore, MAXIDISK works on a Falcon, and the STA 24 RAMdisk doesn't!

## Falcon serial port

In a recent conversation, an old friend of *Programmers' Forum*, Jonathan Lawrence (author of *Mouse Tricks*, amongst other software), raised a rather intriguing question. Jonathan is interested in low-level access to the Atari serial port. This is reasonably well documented for the ST, but what about later machines such as the TT and the Falcon which have different hardware?

Some background information on the serial port provision on the Falcon and TT can be found in Box 1. If you've never heard of `Bconmap()`, it's probably a good idea to review this material before wading off into the detailed discussion below.

For the TT, it is possible to use the

ST-compatible MFP serial port (device 6), so code that runs on the ST should suffice. However, to run on the Falcon, or to give the TT user maximum flexibility, we will need to obtain low-level access to the SCC serial hardware. The problem is that, as far as I know, Atari have not documented this interface.

The most straightforward way to do this is to take a disassembler to the appropriate BIOS routine in the ROM, figure out how it works, and then write some code for our own programs. Although this method would give the most efficient code, it does involve a lot of fiddling with undocumented parts of the machine.

As an alternative, there is a way that we can get at newly arrived serial data without having to hack the hardware. This strategy involves hooking into the 'new character arrived' interrupt, calling the existing TOS routine to retrieve the character from the hardware, and then rescuing the character from the serial input buffer. At the expense of a little time, we remove the need to know how the SCC hardware works.

## Hooking in to the hardware

To see how this technique might be implemented, look at Listing 3. This is a small assembly language program, the Serial Spy, that hooks into the Falcon SCC serial port in the manner described. Since the processing of received serial data is going to vary from one application to another, the program just does a little useless fiddling to show what can be done. Specifically, it counts the total number of characters received by the serial port, and changes all colons to asterisks.

The installation code starts by engaging supervisor mode, which is required as it needs to access several system variables in the protected area of low memory. Besides printing various sign-on and error messages, the code checks that it is running on a Falcon (by looking for a `_MCH` cookie with a value of 3 in the high word). It then locates the `iorec` structure (see Box 2 for more details) for the SCC serial port. An interrupt handler is installed into the 'SCC character received' vector in low memory. To allow other software (see below) to exploit the program, it places a cookie in the jar, before returning to user mode and making the interrupt handler resident.

The interrupt handler creates a fake 68030 interrupt stack frame before invoking the TOS interrupt handler. This manipulation results in control being returned to 'catch' after the TOS routine has taken the character from the hardware and put it in the serial input circular buffer. Notice that subsequent manipulation of the buffer is done with the interrupts disabled to prevent any high-priority interrupts altering the buffer contents. Control is finally returned to the interrupted program via an RTE.

## Reading out the results

To prove to the sceptical that this technique works, Listing 4 provides a way to monitor the function of the interceptor program. The listing contains Lattice C source code for a



desk accessory that displays a dialogue box showing how many characters have been received, and how many colons have been converted to asterisks.

The program illustrates the approved way for a desk accessory to communicate with a resident AUTO folder program - via the cookie jar. The resident program should install a cookie whose value somehow allows the accessory to find the information that it needs. The cookie value might be a pointer to some variables (as here), or a pointer to a set of entry points which can be called.

The code is based on a standard desk accessory shell. After initialisation of the embedded resource data, the accessory installs its entry on the Desk menu, and then enters an interminable loop, waiting for the entry to be selected. When this happens, it locates the Serial Spy by looking for its cookie in the jar using the Lattice function getcookie(). This function takes two arguments: the cookie to look for, and a pointer to a place to write the cookie's value. The return value is 0 if the cookie is not found.

Once the cookie is found, the current values of the Serial Spy's counters are read, and the results displayed in a simple dialogue box. When 'Ok' is clicked, the box is removed, and the accessory returns to sleep.

### Getting it working

To obtain a working demonstration system, assemble and link Listing 3, to produce SPY.PRG, which should be placed in the AUTO folder. Compile Listing 4, and link it with the accessory start-up code. The resulting file should be named SHOWSPY.ACC, and placed in the root directory of a boot disk. It's probably safest to do this on a floppy, unless you are familiar with the hazards of developing AUTO folder programs and desk accessories on your hard disk. After a reboot, the programs will be installed and working.

As a bonus, Listing 5 is a little test program written during the research for this article. It simply copies keyboard output to the current serial port, and serial input to the screen. When hooked up to a serial device like a modem, it provides a test-bed for the development of serial software.

## Bconmap and the Serial Ports

As part of the additional hardware present in the TT and the Falcon, there are several serial ports. These are provided by two types of chip: the MFP 68901, which is the same as in the ST; and the 85C30 SCC. The SCC is a dual channel device with more flexibility than the 68901. It is used on both machines to support a local area network (LAN) port, in addition to RS232 compatible communications.

The TT has one SCC and two MFP chips, which provide four possible serial ports:

SCC Channel A	LAN or RS232 port
SCC Channel B	RS232 port
MFP 1	RS232 port (ST compatible)
MFP 2	RS232 port

The Falcon has one SCC and one MFP chip, which provide three possible ports:

SCC Channel A	LAN port
SCC Channel B	RS232 port
MFP	RS232 port (but see later for qualification)

### Software support

On the ST, the serial port is usually accessed by calling the BIOS character I/O functions (Bconin, Bconout, Bconstat, Bcostat) with a device number of 1. To allow the extra serial ports of the TT and Falcon to be accessed, the meaning of device number 1 has changed from 'the serial port' to 'the currently-selected serial port'.

The selection of the current serial port is performed using a new XBIOS function, Bconmap(). Listing 1 shows how to call Bconmap() if your development system does not include a suitable binding. The new serial ports have been allocated device numbers starting at 6:

Device number	TT port	Falcon port
6	MFP1	MFP
7	SCC Channel B	SCC Channel B
8	MFP2	SCC Channel A
9	SCC Channel A	<illegal>

Therefore, to direct serial output to the LAN port on the Falcon, we would call Bconmap() with an argument of 8 to select the port, and then use Bconout() on device 1 to write our data. Once selected, the port remains active until the next Bconmap() or a reboot. In addition to these I/O functions, the XBIOS Rsconf() and lorec() functions have been altered so they affect the serial device selected by Bconmap(). The number of the currently-selected serial device can be determined by calling Bconmap() with an argument of -1.

As the table shows, the meaning of a device number is somewhat machine-dependent. To simplify things, Atari have guaranteed that device 6 will always be an ST-compatible port. On the TT, the system defaults to this device on boot-up. On the Falcon, the default device is 7, the SCC channel B port. This may seem a little odd, but there is a good reason: the MFP serial port isn't connected to anything! Although the chip is present, the serial port pins are not brought out to any connector. Functionally, therefore, the Falcon has a single RS232 port and the LAN port.

Although this may seem a little complicated, it provides expandability, in that third-party serial drivers can install into the Bconmap system(), by writing an entry into the Bconmap() mapping table. If Bconmap() is called with an argument of -2, it returns a pointer to a structure that contains two useful pieces of information:

Offset	Size	Meaning
0	Long	Pointer to mapping table
4	Word	Number of Bconmap() devices

Each serial device that is to be used with Bconmap() has an entry in the mapping table. An entry consists of six pointers - five pointers to entry points which provide the Bconstat(), Bconin(), Bcostat(), Bconout() and Rsconf() functions, and a pointer to an lorec structure.

To see how to use Bconmap(-2) to locate and process the mapping table, look at Listing 2. This short C program displays the mapping table entry for each mappable device. Figure 1 shows the output for a Falcon with TOS 4.02UK. To be precise, this shows the output for the machine after an AUTO folder patch has fixed a TOS 4.02 bug which prevents Bconmap() working! If the program is run on a clean system, it reports that the current serial device is 7, but that there is only one entry in the Bconmap() table, that for device 6. If your system shows similar behaviour, it can be fixed with FPATCH2.PRG.



## The Iorec

Associated with each serial communications device in the ST is a structure called the iorec (presumably for I/O REcord). There are iorecs for the keyboard, the MIDI input port, and the currently-selected serial device (as mapped in by Bconmap()). An iorec has the following structure (as used in Listing 2):

```
typedef struct {
    unsigned char *io_buffer;
    unsigned short io_bufsiz;
    unsigned short io_head;
    unsigned short io_tail;
    unsigned short io_highwater;
    unsigned short io_lowwater;
} IOREC;
```

io\_buffer points to a block of memory, up to 64K in size, which is used as a circular buffer. io\_bufsiz indicates the size of the buffer. io\_head and io\_tail are indices that specify where characters are to be read out of and put into the buffer, respectively.

To explain how the circular buffer works, we'll think about the MIDI input port. The fundamentals of operation are:

- io\_head and io\_tail contain numbers between 0 and io\_bufsiz - 1. These numbers are treated as indices into the io\_buffer array. Arithmetic involving these indices is performed modulo io\_bufsiz, so the indices wrap round from the end of the array to the beginning.
- If io\_head equals io\_tail, the buffer is empty.
- If incrementing io\_tail would cause it to equal io\_head, then the buffer is full, and no more characters can be accepted until some are removed.
- When a new character arrives at the MIDI port, the TOS interrupt routine checks that the buffer is not full, and writes the character into the memory location whose address is io\_tail + io\_buffer. io\_tail is then incremented by one.
- When the user requests a character from the MIDI port using the Bconin() function, it is read out from io\_head + io\_buffer, and io\_head is incremented.

io\_highwater and io\_lowwater are markers for handshaking that should prevent the buffer overfilling. If the buffer fills up so that the difference between the head and tail pointers exceeds the high-water mark, a handshake protocol (if available) is used to tell the sender to stop supplying characters. When the contents of the buffer fall below the low-water mark, the handshake is released, allowing more input. The marks are normally set at 3/4 and 1/4 of the buffer size.

The XBIOS function Iorec() (code 14) is used to obtain the address of the record for a device. The function takes a single argument, a device number which should be 0 for the current serial port, 1 for the keyboard or 2 for the MIDI input port. The function returns a pointer to the record structure. The serial port actually possesses two structures, one for input and one for output. Iorec() returns a pointer to the input structure. The output structure lies immediately after the input iorec.

*Listings on pages 50-52*

## Bconmap Table Details

Current serial device is 7

Bconmap table is 3 entries long at \$000011D6

### Bconmap details for device 6

Bconstat()	routine is at	\$00E02448
Bconin()	routine is at	\$00E0245E
Bcostat()	routine is at	\$00E024AA
Bconout()	routine is at	\$00E024C2
Rsconf()	routine is at	\$00E02AAC
Iorec buffer is at		\$00000F72

### Bconmap details for device 7

Bconstat()	routine is at	\$00E02F6E
Bconin()	routine is at	\$00E02F78
Bcostat()	routine is at	\$00E02F82
Bconout()	routine is at	\$00E02F8C
Rsconf()	routine is at	\$00E03070
Iorec buffer is at		\$0000165A

### Bconmap details for device 8

Bconstat()	routine is at	\$00E02F98
Bconin()	routine is at	\$00E02FA2
Bcostat()	routine is at	\$00E02FAC
Bconout()	routine is at	\$00E02FB6
Rsconf()	routine is at	\$00E03066
Iorec buffer is at		\$00001436

## Next Month

Next month, *Programmers' Forum* will print more questions and tips from readers' letters. Keep the letters coming in - the more we receive, the better the column gets! Hints on any subjects, or questions about programming problems should be sent to the address below. All contributions, no matter how simple or advanced, are most welcome. Please include your address on the letter, so I can get back to you if anything in your contribution is unclear. Email addresses are useful too.

One last point, about email. Whilst I am very happy to receive contributions by email, please include your real name in the message, as cryptic alphanumeric user identifiers are not terribly useful. Please send a disk (or email) if there are large chunks of text or ASCII source code: I have no time to retype lots of material. Naturally, disks will be returned if an SAE is included.

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## Listing 1

```

**
** Listing 1.
** Programmers' Forum STA 34 (October 1993)
**
** Program fragment showing binding and calling
** details for Bconmap().
**
** Assembler system: MCC ASSEN v12
** Written on 5th August 1993
**

**
** Define symbols...
**

XBIOS    equ    14
Bconmap  equ    44

**
** Subroutine to call the new Bconmap() function
** implemented in TOS 3 and above to support the
** extra serial ports of the TT and Falcon.
** Inputs:    d0.w = Device number of serial port to use
** Outputs:   d0.l = Device number of previously selected port
**             or 44 if this TOS does not support Bconmap.
** Destroys:  d0-d1/a0-a1
**

sexmap   move.w    d0,-(sp)      Stack device number,
        move.w    #Bconmap,-(sp) function code,
        trap      #XBIOS        and call function.
        addq.l    #4,sp
        rts                    Result in d0.l

```

## Listing 2

```

/*
** Listing 2.
** Programmers' Forum STA 34 (October 1993)
**
** Quick program to display the contents of the
** Bconmap() table.
**
** Compiler system: Lattice C v5.52
** Compile options: -cargfku
** Meaning: Enable ANSI mode, disable trigraphs, enable
**           non-ANSI keywords, assume unsigned chars
** Link with C.O and LC.LIB
** Written on 3rd August 1993
**
#include <osbind.h>
#include <stdio.h>

/*
** Typedefs for Iorec() and Bconmap() structures...
**
typedef struct {
    unsigned char *io_buffer;
    unsigned short io_bufsiz;
    unsigned short io_head;
    unsigned short io_tail;
    unsigned short io_highwater;
    unsigned short io_lowwater;
} IOREC;

typedef struct {
    void *dev_bconstat;
    void *dev_bconin;
    void *dev_bconout;
    void *dev_bconstat;
    void *dev_rsconf;
    IOREC *dev_iorec;
} BCONMAP_ENTRY;

/*
** Function declarations...
**
int main(int,char **,char **);

/*
** The program starts here...
**
int main(argc,argv,envp)

int argc;
char **argv, **envp;

{
    BCONMAP_ENTRY *bptr;
    BCONMAP_ENTRY **tabptr;
    unsigned short tabsize;
    int f;

```

```

printf("\033E\nBconmap table details\n-----\n\n");
tabptr = (BCONMAP_ENTRY **)Bconmap(-2);
bptr = *tabptr;
tabsize = *(unsigned short *) (tabptr+1);
printf("Current serial device is %d\n",Bconmap(-1));
printf("Bconmap table is %d entries long at %08lX\n\n",tabsize,bptr);
for (f=0; f<tabsize; f++,bptr++)
{
    printf("Bconmap details for device %d\n",f+6);
    printf(" Bconstat() routine is at %08lX\n",bptr->dev_bconstat);
    printf(" Bconin() routine is at %08lX\n",bptr->dev_bconin);
    printf(" Bconout() routine is at %08lX\n",bptr->dev_bconout);
    printf(" Bconout() routine is at %08lX\n",bptr->dev_bconout);
    printf(" Rsconf() routine is at %08lX\n",bptr->dev_rsconf);
    printf(" Iorec buffer is at %08lX\n",bptr->dev_iorec);
    putchar('\n');
}

printf("Press RETURN to continue: ");
getchar();
return(0);
}

```

## Listing 3

```

**
** Listing 3.
** Programmers' Forum STA 34 (October 1993)
**
** Program to show how to perform interrupt-driven
** serial handling on the Falcon, without having to
** know anything about the hardware.
**
** As a demonstration, the program counts the total
** number of characters received from the serial port,
** and also translates ':' to '*', not because this is
** useful, but just to show what can be done !
**
** Assembler system: MCC ASSEN v12
** Written on 20th July 1993
**

**
** Define symbols used by the program.
**

GENDOS    equ    1
Cconws    equ    $09
Super     equ    $20
Ptermres  equ    $31

XBIOS     equ    14
Iorec     equ    14
Bconmap   equ    44

MAGIC     equ    'SSpy'

**
** System variables...
**

SCCIn      equ    $0190    SCC character input vector
_p_cookies equ    $05A0    Pointer to cookie jar

TEXT

**
** The program starts by jumping to the installation code,
** at the end of the file. This allows us to make only the
** minimum code resident.
**

start      bra.s    install(pc)    Install the program.

;-----
**
** The resident interrupt handler. This is called
** whenever a byte arrives at the Falcon's main serial
** port.
**

dc.l       'XBRA'           XBRA vector header.
dc.l       MAGIC           Our identifier: XBRA and cookie
old_vec    dc.l       0     Place for old vector

handler    move.w    6(sp),-(sp)    Create 68030 interrupt stack frame.
           pea      catch(pc)      We want to come back to our handler.
           move.w    SR,-(sp)      Frame type 0 - 6 words.
           move.l    old_vec(pc),-(sp)    Fetch the old vector and stack.
           rts                    Indirect jump to do it.

catch      addq.l    #1,counter    Bump the input counter.
           movem.l   d0-d1/a0,-(sp)    Save the registers we use.
           move.l    iorec(pc),a0    Fetch the iorec pointer.
           ori.w     #0700,SR       Turn off the interrupts.
           move.w    8(a0),d1       Fetch tail index.
           move.l    (a0),a0        Fetch the buffer pointer.
           move.b    0(a0,d1.w),d0  Fetch the character just received.
           cmp.b     #' ',d0        Is it a colon ?

```



```

bne.s    l$      Skip on if not.
addq.l   #1,mappings  Bump the mapping counter.
move.b   #'',0(a0,d1.w)  Replace the colon with a ''.
l$       movem.l  (sp)+,d0-d1/a0  Recover registers.
         rte      Restore old IPL and return.

```

```

counter  dc.l    0      Number of characters received
mappings dc.l    0      Number of characters mapped
iorec    dc.l    0      Pointer to serial Iorec structure

```

```

;-----
**
** The installation code portion.
**

```

```

install  clr.l    -(sp)      We need to do much of the installation
         move.w   #Super,-(sp)  in supervisor mode, so enter now.
         trap     #GENDOS
         addq.l   #6,sp
         move.l   d0,a6      Copy the old SSP.
         pea      banner(pc)  Print the sign-on message.
         move.w   #Cconws,-(sp)
         trap     #GENDOS
         addq.l   #6,sp

```

```

         move.l   #' MCH',d0  Check that we are on a Falcon.
         bsr      getcookie    Scan the cookie jar.
         lea      jarerr(pc),a0  Preload absent cookie jar error.
         beq.s    error        Quit with error.
         lea      mcherr(pc),a0  Preload missing cookie error.
         bmi.s    error        Quit if no machine cookie.
         swap     d0           Make high byte available.
         lea      f030err(pc),a0  Preload error message.
         cmp.w    #3,d0        Is the machine a Falcon ?
         bne.s    error        Quit if not.
         move.l   #MAGIC,d0    Is the program already installed ?
         bsr      getcookie
         lea      dblerr(pc),a0  Preload double-installation message.
         bpl.s    error        Quit if cookie present.

```

```

         moveq    #7,d0        Find iorec for device 7 - SCC.
         bsr      getiorec
         lea      deverr(pc),a0  Bad device error message.
         beq.s    error        Quit if not OK.
         move.l   d0,iorec     Save pointer to SCC Iorec.

```

```

         move.l   SCCin.w,old_vec  Install our vector handler.
         move.l   #handler,SCCin.w

```

```

         move.l   #MAGIC,d0      Install our cookie.
         move.l   #counter,d1     Pointer to our variable table.
         bsr      addcookie
         lea      fullerr(pc),a0  Preload full jar error. Absent jar
         beq.s    error        would be caught earlier. Exit if error.

```

```

         move.l   a6,-(sp)      Return to user mode.
         move.w   #Super,-(sp)
         trap     #GENDOS
         addq.l   #6,sp
         move.l   #install,d0   Address of first byte to trash.
         sub.l    4(sp),d0       Calculate length of block to leave.
         clr.w    -(sp)         Zero return code.
         move.l   d0,-(sp)      Size to keep resident.
         move.w   #Ptermres,-(sp)  Terminate and stay resident.
         trap     #GENDOS

```

```

**
** The error exit point. When execution arrives here,
** a0 should be pointing to an error message, and a6
** should contain the old value of the SSP.
**

```

```

error    move.l   a0,-(sp)      Print the specified error message.
         move.w   #Cconws,-(sp)
         trap     #GENDOS
         addq.l   #6,sp
         pea      suffix(pc)    Follow this with the constant error
         move.w   #Cconws,-(sp)  suffix.
         trap     #GENDOS
         addq.l   #6,sp
         move.l   a6,-(sp)      Return to user mode before exiting.
         move.w   #Super,-(sp)
         trap     #GENDOS
         addq.l   #6,sp
         clr.w    -(sp)         Now terminate immediately.
         trap     #GENDOS

```

```

;-----
**
** Installation subroutine area.
**

```

```

** Subroutine to scan the cookie jar for a specified
** cookie. Error codes are returned if the jar is
** missing or if the cookie is not present.
** Inputs:    d0.l = Name of cookie to look for
**            ** SUPERVISOR MODE **
** Outputs:   d0.l = Value of cookie
**            a0 -> Pointer to cookie

```

```

** EQ -> No cookie jar
** MI -> Specified cookie not found.
** Destroys: d0-d1/a0

```

```

getcookie move.l   _p_cookies.w,d1  Fetch the cookie jar pointer.
         bne.s    l$      Skip if non-zero - jar present.
         rts      Return with 'no jar' error [EQ].
l$       move.l   d1,a0      Make pointer useful.
2$       move.l   (a0),d1     Fetch a cookie's value.
         beq.s    3$      Exit if end of jar marker.
         addq.l   #8,a0      Bump to next cookie.
         cmp.l    d0,d1     Is it the one we want ?
         bne.s    2$      No, loop round for another.
         subq.l   #8,a0      Correct cookie pointer.
         move.l   4(a0),d0    Fetch the cookie value.
         moveq    #1,d1     Make sure no error return.
         rts
3$       moveq    #-1,d0     Signal cookie not found.
         rts

```

```

**
** Subroutine to add a cookie to the cookie jar. This
** is a very simple-minded version, in that it cannot
** relocate and expand a full cookie jar. The routine
** returns an error if the jar is absent or full.
** Inputs:    d0.l = Name of cookie to add
**            d1.l = Value of cookie to add
**            ** SUPERVISOR MODE **
** Outputs:   EQ -> Jar full or absent
** Destroys: d0-d2/a0

```

```

addcookie move.l   _p_cookies.w,d2  Fetch the cookie jar pointer.
         bne.s    l$      Skip if non-zero - jar present.
         rts      Return with 'no jar' error [EQ].
l$       move.l   d2,a0      Make pointer useful.
1$       clr.l    d2        Count cookies looked at.
         tst.l    (a0)      End of jar yet ?
         beq.s    3$      Yes, so quit.
         addq.l   #1,d2     Bump the cookie counter,
         addq.l   #8,a0     and move to the next cookie.
         bra.s    2$      Loop until end marker found.
2$       cmp.l    4(a0),d2    Is jar full ?
         bpl.s    4$      Yes, signal an error.
         move.l   0(a0),8(a0)  Copy the end marker.
         move.l   4(a0),12(a0)
         move.l   d1,4(a0)   Insert our cookie. Do it in reverse
         move.l   d0,(a0)    so flags are set right (a cookie name
         rts      cannot legally be 0). Return.
4$       clr.l    d0        Raise the error signal...
         rts      ...and return.

```

```

**
** Subroutine to return a pointer to the Iorec
** for the specified BIOS device. The input is
** a device number, from 0 to some machine dependent
** limit. The routine returns a pointer or zero,
** if an error occurs (invalid device, device with
** no Iorec, duff Bconmap, etc). For ST-compatible
** device numbers, the Iorec is obtained directly,
** for higher devices, Bconmap is used.
** Inputs:    d0.w = Device number to scan for.
** Outputs:   d0.l = Pointer to Iorec, or zero
**            EQ -> Error (see above)
** Destroys: d0-d2/a0-a2

```

```

getiorec subq.w    #1,d0      Reduce device number range for Iorec.
         bpl.s    2$      If not printer, carry on. Printer is
1$       clr.l    d0        an error, as it has no Iorec. Make
         rts      error flags and return.
2$       cmp.w    #2,d0      Basic device number (ie devs 1-3) ?
         bgt.s    3$      No, so need to use Bconmap.
         move.w   d0,-(sp)    Device number should be right for
         move.w   #Iorec,-(sp)  direct XBIOS call.
         trap     #XBIOS
         addq.l   #4,sp      Result set into d0 already.
         rts
3$       subq.w    #5,d0      Reduce range for Bconmap.
         bmi.s    l$      Error if IKBD or RAM device.
         move.l   d0,-(sp)    Save Bconmap index.
         move.w   #-2,-(sp)   We need to find out about the
         move.w   #Bconmap,-(sp)  serial ports.
         trap     #XBIOS
         addq.l   #4,sp
         move.w   (sp)+,d1    Recover the table index.
         cmp.w    #Bconmap,d0  Is Bconmap supported ?
         beq.s    l$      No, so we have an error.
         move.l   d0,a0      Copy pointer to the Bconmap table.
         cmp.w    4(a0),d1    Is the index in range ?
         bhi.s    l$      No, so signal an error.
         move.l   (a0),a0     Fetch the table start pointer.
         lsl.w    #3,d1      Index into the table. Multiply
         move.w   d1,d0      by 24 (= x 16 + x 8).
         lsl.w    #1,d1
         add.w    d0,d1
         move.l   20(a0,d1.w),d0  Pull out the Iorec pointer, this
         rts      should never be null, so OK to return.

```



```

-----
**
** Data area for installation code.
**

banner dc.b 13,10,13,10,'Falcon030 Serial Port Spy',13,10
dc.b 'by Jon Ellis, 20 July 1993',13,10,13,10,0

jarerr dc.b 'Cookie jar missing',0

mcherr dc.b 'Cannot find _MCH cookie',0

f030err dc.b 'This is not a Falcon',0

dbterr dc.b 'Program already installed',0

fullerr dc.b 'Cookie jar is full',0

deverr dc.b 'Cannot get device Iorec',0

suffix dc.b ' - installation aborted !',13,10,13,10,0

END

```

## Listing 4

```

/*
** Listing 4.
** Programmers' Forum STA 34 (October 1993)
**
** Desk accessory which interfaces with the resident
** Falcon serial port interceptor via the cookie jar.
**
** Compiler system: Lattice C v5.52
** Compile options: -cargfku
** Meaning: Enable ANSI mode, disable trigraphs, enable
** non-ANSI keywords, assume unsigned chars
** Link with CACC.O, LC.LIB and LCG.LIB
** Written on 3rd August 1993
**/

#include <aes.h>
#include <cookie.h>
#include <portab.h>
#include <stdio.h>
#include <vdi.h>

/*
** Define object tree for display dialogue box.
**/

TEDINFO rs_tedinfo[] = {
{"Falcon030 Serial Port Spy", "", "", IBM,6,TE_CNTR,0x1180,0,-1,26,1},
};

OBJECT box[] = {
{-1,1,6,G_BOX,0x0,0x10,(void *)0x21100,1,1,43,8},
{2,-1,-1,G_BOXTEXT,0x0,0x11,&rs_tedinfo[0],6,1,31,1},
{3,-1,-1,G_STRING,0x0,0x0,"Number of characters received:",2,3,30,1},
{4,-1,-1,G_STRING,0x0,0x0,"00000000",33,3,8,1},
{5,-1,-1,G_STRING,0x0,0x0,"Number of characters mapped:",2,4,28,1},
{6,-1,-1,G_STRING,0x0,0x0,"00000000",33,4,8,1},
{0,-1,-1,G_BUTTON,0x27,0x0,"Ok",17,6,8,1},
};

/*
** Prototype functions...
**/

int main(int,char **,char **);

/*
** Define symbols required by program...
**/

#define SSPY_COOKIE 0x53537079 /* This is 'SSpy' - the cookie name */

/*
** The program begins here...
**/

int main(argc,argv,envp)

int argc;
char **argv, **envp;

{
int f;
unsigned long *counter;
short ap_id, menu_id, pipe[8];
short x, y, w, h;

ap_id = appl_init();
for (f=0; f<7; f++)

```

```

rsrc_obfix(box,f);
form_center(box,&x,&y,&w,&h);
menu_id = menu_register(ap_id," Serial Spy");

while (TRUE)
{
evnt_msga(pipe);
if (!pipe[0] == AC_OPEN && pipe[4] == menu_id)
continue;
if (getcookie(SSPY_COOKIE,(long *)&counter) == 0)
{
form_alert(1,"[1] Cannot find Serial Spy/cookie. Is the
program installed ?|[Cancel]");
continue;
}
sprintf(box[3].ob_spec,"%lu",*counter);
sprintf(box[5].ob_spec,"%lu",*(counter+1));
form_dial(FMD_START,0,0,0,0,x,y,w,h);
objc_draw(box,0,9,x,y,w,h);
form_do(box,0);
box[6].ob_state = "SELECTED";
form_dial(FMD_FINISH,0,0,0,0,x,y,w,h);
}
appl_exit();
return(1);
}

```

## Listing 5

```

/*
** Listing 5.
** Programmers' Forum STA 34 (October 1993)
**
** Very quick program to provide a test-bed for
** experimenting with the serial port. Characters
** typed at the keyboard are copied to the current
** serial port, and any input received at the serial
** port are copied to the screen.
**
** Compiler system: Lattice C v5.52
** Compile options: -cargfku
** Meaning: Enable ANSI mode, disable trigraphs, require function
** prototypes, enable non-ANSI keywords, assume unsigned chars
** Link with C.O and LC.LIB
** Written on 20th July 1993
**/

#include <osbind.h>
#include <portab.h>
#include <stdio.h>

/*
** Define some symbols to make the BIOS
** character IO functions more friendly.
**/

#define SERIAL 1
#define CONSOLE 2

#define ESCAPE 0x1B

/*
** Prototype the functions...
**/

int main(int, char **, char **);

/*
** The program begins here...
**/

int main(argc,argv,envp)

int argc;
char **argv, **envp;

{
int c;

printf("\033E");
while (TRUE)
{
if (Bconstat(CONSOLE) != 0)
{
c = Bconin(CONSOLE);
if ((c & 0xFF) == ESCAPE)
break;
Bconout(SERIAL,c);
}
if (Bconstat(SERIAL) != 0)
Bconout(CONSOLE,Bconin(SERIAL));
}
return(0);
}

```



# CAD Column

Joe Connor organises a Kandinsky Shareware registration, finds a dream power users' machine and welcomes the return of the Atari Image Manager

My mini-review of Kandinsky in STA 32 has generated a lot of interest. Most of the enquiries were asking about the English Version and Registration. I have spoken to the author and am pleased to tell you that by the time you read this an English Version will be available. Order disk GRA.184 from the ST Club.

A few of the non-essential (but very desirable) features of Kandinsky are only available in the Registered version. These include a printed manual, Postscript Export option and excellent Zoom function. From your letters it seems most people would register if there was a UK address, and so with the full consent of the author I am offering (on a trial basis) a registration service which works like this:

Send a cheque made payable to Mr J E Connor for £15 crossed A/C payee only which will be held without cashing until ten cheques are received. I then cash the cheques and send the author the total amount minus any Bank charges together with a list of your names and addresses. You will subsequently receive the latest Registered version.

The main advantage of this local registration option is that it's a simple, risk free money saving method. German banks charge anything up to £8 per transaction!

My thanks go to Sam Marshall who Emailed me these tips for speeding up Kandinsky (and a cheque to register his copy):

By default the dialogues are in GEM windows (for the benefit of MultiTOS'ers I believe). On a normal ST things are much better if this option is turned off (you still get movable windows) from the Program Dialog box.

Alternating between the tools and the drawing window also prompts a redraw. This can be avoided by holding down the right mouse button whilst clicking with the left on a tool icon (a standard GEM trick that I usually forget!).

## Medusa T40 System

If you're waiting for an 040 Falcon to do some serious CAD or DTP on then this package might just have you planning a combined ski/business trip to Switzerland! To the power hungry amongst us the Falcon's 030 running at 16MHz was a big disappointment so how about this little lot:

Motorola 68040; clocked at 64Mhz, internal FPU and PMMU! (26 MIPS, 4.5 MFLOPS)

Medusa bus; 32 bit data and address clocked at 32Mhz, full bus snooping/read/write

Atari bus; 16 bit data, 24 bit address, bus snooping/writing

RAM; 8 to 128 Mb on board (!) read 73Mb/Sec, write 85Mb/Sec

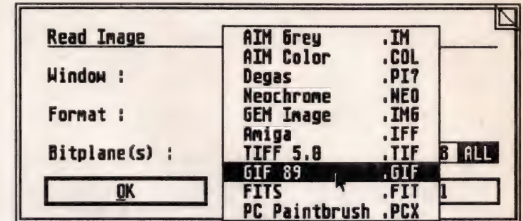
EPROM; 0.5 to 2Mb on board, 32 bit wide Operating System; TOS 2.06 slightly modified

Slots provided on Medusa board; 6x100 pole main bus, 4x80 pole Atari bus, 2x60 pole memory bus

Compatibility; all cleanly programmed Applications run. There is a long list of software tested with Medusa

File	GreyOps	BinOps	Utils
Readf	Point Ops	Morph Ops	Display
Writf	Arithm Ops	Bit Ops	Histogram
Cread	Sgn Arith Ops	Meas Ops	Timer
Grabber	Non-Arith Ops	Graph Ops	Dump
Scanner	Lin Filters		Shad
Printer	N-Lin Filt 1		Help
Macro Logging	N-Lin Filt 2		
Preferences Setup	Adapt Filt		
Quit			

## Atari Image Manager v3.1



A few years ago the Atari Image Manager was one of the most popular PD applications around. This revamped version loads most of the popular Image formats and turns them into a complete mess in no time! If you understand the jargon in the drop down Menus you are likely to minimise the risk but then you'll miss half the fun. For most users AIM is a gambling man's Retouche. Some amazing image manipulations are possible but it's not easy to find the right command.

Every Command, prompt for input and On-line help text is processed through the CLI in the the Command Line Interface (CLI) which appears in the Command Window, if opened. Output from the CLI can optionally be logged to a file.

It's possible to grab images from a TUD digitiser or colour frame grabber and a scanner can be used to input images directly via the serial port.

Apart from its image manipulation options AIM is a very capable file conversion utility as it writes all the supported input formats except PC Paintbrush and GIF.

Experimentation is the key to AIM, with many transformations resulting in mangled pixels! Typing 'gdisplay' followed by the Image Window (A-D) will normally get the original back. A PD essential: order disk GRA.173 from the ST Club.

including all the applications I expected to see except Spectre, which doesn't work. For Applications which do not run perfectly there is a variety of software switches to coax the software out to play. These switches control the various Caches, Fast RAM access, 8Mhz mode, and a few patches, hey even Tempus can be made to run!

Medusa does not stop there, and the planned list of extensions is ambitious: VME 16 Bit and laser printer

card, SCSI II card, Graphic card, DSP card, 68060 card.

For 2810 Swiss Francs (around £1400) the Basic Medusa system comprises:

Medusa T40 Motherboard, 64MHz 68040, 8Mb Fast-RAM, Tower Case, Installation and Driver software, assembly, 24 hour test and one year guarantee.

Contact: Medusa Computer System Switzerland; Telephone 010 41 1 9409254; Fax 010 41 1 9401949.



## For Sale

Mega STE with 4Mb Ram, TOS 2.06; Timeworks DTP, That's Write, Neodesk, Mouse £395; with Atari SM144 Monitor £485. Contact:- Dave 0529 305611 (Sleaford - Lincs) (34)

That's Write 2.07 £60, ST Basic £8, UVK £5. Games: Epic £8, Wolfchild £8, Super Pro Zipstick (Unused) £8. All items in original boxes + manuals. Books: Atari Tricks & Tips, ST Explored, Official AES & VDI Manuals, Introducing Assembler (+ software). Books at £6 each. Also some magazines with coverdisks at £1.50 each. ST Format, User etc. Prices do not include p & p. Contact Allen Fareham (0329) 282988. (35)

Gemulator - new and in original packaging with latest software. Use Atari software on your PC! £110. Reg Williamson, 67 Galleys Bank, Kidsgrove, Staffs, ST7 4DE. Tel: 0782 782419. (34)

Atari SM124 Monitor £60, Powerdrive 900 20Mb/ICD £80, AT Speed £50, 2 x 1Mb Simms for STE £15 each, Forget-me-clock II £8, Replacement 1Mb Internal Drive £20, External 5.25" Floppy Drive Atari/PC Switchable £25, Fontkit Plus 3 £10, Easydraw 2 £15, Knife-ST £15, MS-DOS 3.03 5.25" disks £10. Telephone 081-422 9099. (34)

Power Computing Series 48MB hard drive - £150. Hisoft Basic V1 - £12. Hisoft Devpac V2 - £12. Lattice C V5 - £40. All with full manuals. Call Andrew on 0788-811995. (35)

Fleet Street Publisher V3. £30. Phone 0738-37165 (evenings) (34)

# Classified Adverts

*Classified adverts are free to subscribers.*

*Please use the form on page 58.*

520 STFM with new internal drive, Pace Linnett Modem, Replay 8 sampler, Devpac 2, Ripper cartridge, assorted games and PD. £150 the lot. Phone Andy on (0435) 882121 or (071) 956 7075 weekdays. (36)

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Tempus 2 Editor £12, Jimmy White Snooker £8, John Barnes Football £6, Robocod, Graham Souness Vector Soccer, Lotus Turbo Challenge 2,

Another World £5 each. More software from £2, mainly games. P+P inclusive. Phone Gary on (0293) 534415, evenings. (34)

Forget-Me-Clock unused £10, Zydec 3.5" External Drive, little used, boxed £30, Unused Atari Mouse £5. All + Postage. Phone Ted: 0983 294247 (35)

Star LC-10 Colour Printer, as new condition, complete with Parallel lead, spare colour and black ribbons, fan-fold paper, manuals, software drivers (if required) £155.00.

Bubblejet Ink Refill Service using finest quality "Permanent Black" ink (gives better print quality than the original cartridge). Prices are £5.00 for Standard capacity, £7.50 for High Capacity and includes return postage UK. Telephone Brian on 0909 486971. (34)

Upgrade your ST at low cost. Integrated Unit containing 40 Meg Hard Disc,

Second Floppy Drive and High Speed Modem. Manuals, Cables and Software included. All in excellent condition. Will deliver any reasonable distance. £265.00 ono. Tel 0794-8844-4 (South Wilts). (34)

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Goldstar 386 SX PC Compatible 120MB Hard Drive, 3.5" and 5.25" Floppy drives, 3MB Ram, 512Kb VGA Card, Colour Monitor, Co-Processor, Logitech Trackerball, DOS 4.01 installed, First Choice Word - Processor/Data Base Included. All manuals. Virtually new, hardly used, On-Site Warranty transferable - £750.00 ono. Phone John on Winchester (0962) 760045 after 7pm or weekends. (35)

Ladbroke Computing 48Mb Hard Disk Drive £200 - Tel 0244 543209 Evenings. (34)

STE with 4 Meg Ram - £200, 40 Meg

## Authorware

If you would like to see your software featured in the ST Applications Authorware column please send us a review copy of the software and a rough outline of the advertising copy you would like to be printed.

### Morse Master

The complete morse trainer and simulator, with realistic 'on-air' emulator and integral editor, with complete control of your listening equipment. In addition to sending, your Atari can also receive and decode morse from your own key using the supplied interface cable. Send Cheque/PO for £29.99 payable to Boscad Ltd at: 16 Aytoun Grove, Balbridgeburn, Dunfermline, Fife, KY12 9TA. Telephone (0383) 729584 evenings for technical information.

### STEN

ST ENthusiasts disk magazine - for your copy send a disk + SAE to: Dave Mooney, 14 School Road, Morning-side, Newmains, Lanarkshire.

### SynTax

The ST adventure magazine on disk! Reviews, solutions, hints, special features and much, much more. Runs in colour only. Produced bi-monthly. SynTax costs £3.50 an issue, £20 for a year's subscription. Cheques made payable to S. Medley should be sent to: 9 Warwick Road, Sidecup, DA14 6LJ.

### Kitchen Design Program

Create kitchen plans, and elevation views to scale from a wide selection of units and appliances with worktops, pelmets, etc. High resolution mono only. Lawrence Elliott, 42 Gwaun Coed, Brackla, Bridgend, Mid Glamorgan CF31 2HS.

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### Calamus Manual

This self-tutorial guide incorporating sections on frame drawing, entering text, changing fonts and styles, importing text and images, drawing boxes and lines, loading, saving, printing, text rulers, headers and footers and page numbers. Available at £5 (including postage) from: David Waller, The Sandon School, Molram's lane, Great Baddow, Chelms-

ford, Essex, CM2 7AQ. Cheques should be made out to 'Sandon School'.

### Genealogy

Newgen, my genealogy program, runs on any ST(E) or TT and is easy to use; it will print family trees, etc. Send large SAE for details or £17 for program. E G Richards, 2 Peckarmans Wood, London SE26 6RX.

### Educational Adventures

For ages 5-13. 88% in ST Format. £12 each. 50p per disk for demo's. CVS, 18 Nelson Close, Teignmouth, TQ13 9NH. Tel: (0626) 779695.

### RAE Morse Test

Selectable letter/number groups, thinking time, note pitch, morse generation from keyboard for CQ; plus save to disk, etc. Instruction manual and disk and SAE for more details. R. L. Tuft, 62 Admirals Court, Thirsk, North Yorks, YO7 1RR. Telephone: 0845-525082.

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Use up to four light beams with your ST. Measure speed and acceleration. Write data to disk for spreadsheet. Invaluable for science National Curriculum AT4. High resolution only. Software and manual with full details £20. Cheques payable to:

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A specialised database system for all scanner owners, this software has been designed to be very easy and quick to use.

For further details contact: Stuart Coates, 9 Links Road, Kibworth Beauchamp, Leicester LE8 0LD.



Hard Drive & Clock Cartridge - £175, Atari SM124 Mono Monitor - £75, Golden Image Hand Scanner with Touch-Up - £60. Phone Steve 0242-231691. (34)

Supercharger V1.4 IBM PC emulator (1Mb RAM and 8087 coprocessor fitted), connects to Atari ST via DMA port; with MSDOS 4.1, SC manual, 3.5" disks, power supply and cables, £100, PC-DITTO software PC emulator, manual and 3.5" disk, £10, MSDOS 3.3 manuals and 5.25" disks, £15. External 5.25" 40/80 track floppy disk drive (Power Computing) for Atari ST, integral mains power supply, £20. REDACTEUR 3 Word Processor, manual and 3.5" disks, £40. Telephone: Newcastle, Staffs, (0782) 610398 (evenings). (35)

That's Write 2, Unused £75: Daata-sound Sampler - STE Version £20: Vortex Atonce 286 Emulator STFM Version, unused £60. Call 0275 375496 after 8.30pm. (34)

Would you like to learn ST Assembler? I have a small supply of 'First Steps in 68000 Assembly Language' by Robert Erskine, 276 pages in brand new condition, cover price £12.50 for only £5.99 inc p and p. Cheque/P.O. to N. Vandyk, 8 Finchley Way, London, N3 1AG. (34)

Changing system! Mega 4 with Turbo 25 accelerator, TOS 2.06, Overscan & HD floppy drive. SM125 monitor, new series Power 900 40MB hard drive and Power Scanner included. All for £650, near offers considered. Telephone Watford (0923) 266636 evenings. (35)

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500910. (34)

Atari STFM 1040, SM124 monitor, mouse and Forget-Me-Not II clock - £175. Software: First Word Plus £10. Datamanager Professional £10. Time-works 2 £10. Personal Finance Manager £3. PFM Plus £5. Ultimate Virus Killer £3. PC Ditto £3. Family Roots £5. All items in original packaging with manuals. Buyer to collect or add postage. Ring 0676 532854 for further details. A.F. Sweatman, Solihull. (34)

Atari SM144, 14" hi-res monochrome monitor. Nearly new. £60 ono. Tel: 0476 66956 (Grantham). (34)

Atari 1040 STFM with Philips CM8833 colour monitor plus some software and manuals. £250 the lot. Dayphone Howard or Ted in Bristol 0272 249546. (34)

Quick ST 3, Universal Item Selector, Pirates!, Blood Money, Chrono Quest, Adv. Prog. Guide, STOS int., Battle Command, Powermonger, Starglider 2, Battle Zone, Fantasy World, Dizzy Spindizzy, 10 ST Formats. Offers to 1A Effra Court, Brixton Hill, London SW2 1RB. (35)

Redacteur 3 full version £45, HP DJ500 FX80 emulation cartridge £30, Master-sound 2 £8, ICD Cleanup ST £15, Scanlite £10, STOS and STOS compiler with manuals £5 each, STOS 3D manual £4, Game Makers' Manual £7. Phone 0256 896879. (34)

Easy Draw 2 (four disks) £25, GFA Draft with Manual £17, Degas Elite £10, The Sentinel (game) £5. 071 435 7664. (34)

65MB SCSI Hard Disk with ICD Host Adaptor, Software, Cables & Internal Battery Backed Clock £250 ono. Ring David on 0242 519011. (34)

KSpread 4 £20, Master Cad £15, Touch Up V1.6 £30, Headline with many fonts £25, Font 2 Font Editor £12. Telephone 0923 266636 Evenings. (34)

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ST Games for Sales: 9 Top Quality original games including Lotus Esprit Turbo Challenge, Awesome and James Pond. All 9 for £29.00 (may split). Write (enclosing a SAE) to:

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## Wanted

Konica extended high density 5.25" floppy disks ref. MD/10SV or equivalent. 10MBYTE floppy disks as used in the Supra FD-10 floppy disc drive. Alan Price (051) 724 1232 (Liverpool). (35)

Hard Drive complete and good condition, at least 40 meg, also 'Realtime' Music Program for ST required. Phone Pat 081 573 2736. (34)

Mega STE wanted, any type, any capacity, please write to Miss C Jeffries, 5 Ashland Close, Sutton in Ashfield, Notts. NG17 2GL. (34)

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Mono Monitor (anything considered) + PageStream 2.1. Ted, 0983 294247 (I.O.W.) (34)

'Transfile ST CL' for Psion Organizer - No longer available from Widget Software - Phone Nigel on 081-310-4250. (34)

Hyperpaint 2 - Please Phone Rod Egglestone - 0909770162 Office Hours or 0742304545 weekends & evenings until 9.00pm (September). (34)

Ultimate File Extension List. Any file extension description wanted for a PD Database: Name, Programme Use, Type, Comments and Info. Apple and PC Extensions also wanted. Ring Sterling O'Blivion 0274 595927. (35)

Motherboard to work with Yamaha Portastudio PSS-51 Synth and Atari 1040 ST-E Micro. Suit Music Student Tel 0745.825 036 anytime. Ask for Paul. (34)

Your unwanted ST Software, Games, Applications etc. Anything considered at a realistic price. Must be boxed originals with manuals. Send list to Steve Aizlewood, 19 Brushfield Road, Holme Hall, Chesterfield, S40 4XF. (36)

Calamus Fonts & Clip Art: Sale or Swap - anything considered. Ring now: Andy 0532-430177. (34)

High Resolution Mono Monitor. Tel: Ian on 081 693 1735 evenings/weekends (South London). (34)

FATE: GATES OF DAWN, an RPG for the ST by Reline. If you've got a copy you no longer want OR can put me in touch with somebody who sells it (Reline's address would be great!) then please write to: Colin Campbell, 21 Aldbury Mews, London N9 9JD or phone 081 364 3982. Thanks. (35)

Stacy or ST Book - Anyone selling one? I might be interested. Tim (0395) 264412 6-7pm weeknights. (35)

Hand Scanner, Multisync Monitor, RLL HD Mechanism, Phone Jon (0323) 500910. (34)

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## General

That's Write and Write ON files output to HP DeskJet 500c at 25p per page plus p + p. HP DJ cartridges refilled with quality ink (black only) and tested: Standard - £6.99; High Capacity - £9.99 inc. p + p. Cheques payable to: K Hornby, 33 Ingleton Drive, Lancaster LA1 4RA. (36)

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# Reader Survey

As ST Applications heads towards its third birthday we are taking stock of the future form and content of the magazine. User input is an essential part of this process and we urge all subscribers to fill in the survey below and send it to us by the end of September. As an added incentive we will be awarding a free 6-issue ST Applications subscription to the first five entries drawn out of the box from those received before 1st October 1993.

1. Give a mark between 1 (low) and 5 (high) for each of our Regulars. Circle your choices:

Beginners' Forum	1	2	3	4	5
CAD Column	1	2	3	4	5
Desktop Discussions	1	2	3	4	5
Falcon Applications	1	2	3	4	5
Forum	1	2	3	4	5
Going On-Line	1	2	3	4	5
Grafix Arts	1	2	3	4	5
News	1	2	3	4	5
PD Update	1	2	3	4	5
Programmers' Forum	1	2	3	4	5

2. Would you like to see more, the same, or less of each of the following types of article/review? Circle your choices:

Hardware Reviews	More	Same	Less
Software Reviews	More	Same	Less
Tutorials	More	Same	Less
Art	More	Same	Less
CAD	More	Same	Less
Classified Adverts	More	Same	Less
Comment	More	Same	Less
Comms	More	Same	Less
Databases & Spreadsheets	More	Same	Less
Desktop Publishing	More	Same	Less
Games	More	Same	Less
MIDI	More	Same	Less
Operating Systems	More	Same	Less
PD Reviews	More	Same	Less
Programming	More	Same	Less
Readers' Letters	More	Same	Less
Software comparisons	More	Same	Less
Utilities	More	Same	Less
Wordprocessing	More	Same	Less

3. Which article/review in the last few issues (25-33) did you particularly enjoy or find useful?

4. What is your main sphere of use/interest with your ST?

5. What is your opinion of the general level of the magazine?  
Balanced      too heavy      too light

6. Which kind of review/article do you:

- a) always read?  
b) never read?

7. How do you feel about the layout and readability of ST Applications:

8. Would you support moves to print ST Applications in colour if this would add 50% to the subscription rates? [ ] Yes [ ] No

9. What do you think of the bi-monthly Disk Mag?

10. Would you prefer: [ ] Monthly Disk [ ] Bi-monthly Disk [ ] No Disk Mag

11. Do you think that subscriptions are: [ ] Cheap [ ] Just right [ ] Expensive

12. What other computer magazines do you read:

13. Do you plan to upgrade to a Falcon030 in the next year?

[ ] Yes [ ] No [ ] Only if Atari .....

14. Any further comments you would like us to read:

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sage. If you need comms software get Uniterm from the ST Club. (R)

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'Alternatives fanzine - Quarterly. £1 per issue. Issue 9 out now (Autumn), Issue 10 out soon. Send £1 (which includes p+p) and address to Alternatives, 39 Balfour Court, Station Road, Harpenden, Herts, AL5 4XT. Writers, visionaries, artists needed. Details to the above address.

## Help

I have a Protar 100 DC Series II Hard Drive (System Software 4.1.2) and a 1040 STF. The drive Formats OK, but attempting to copy a large file from floppy to the drive results in 3, 4 or 11 bombs. Turbodos helps - I can copy files of up to around 50K. The conflict must be with TOS 1.2. Can any one help? Protar and Cambridge Business Software don't answer my letters. Contact me on Internet Emeli c/o Panther & Carla Dist.UniGe.It, or write to Clyde Meli, 36 Ta'xbiex Terrace, Ta'xbiex, Malta.

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## DEGASART v2.0

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GRAPH can draw simple functions, implicit functions, parametric and polar functions and display the gradient functions of any of these. It will also display the solutions to first order differential equations and do a simple plot of complex functions. The zoom facility can also be used to find accurate solutions to equations.

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Both these programs can save, reload, and print the drawing made by them.

STACK is an arithmetic calculator (Hewlett Packard type) for use with very large whole numbers. It will factorise smallish numbers (up to 15 figures) quite quickly.

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Michael Girling, Camel Quarry House, Wadebridge, Cornwall PL27 7HZ.



1892

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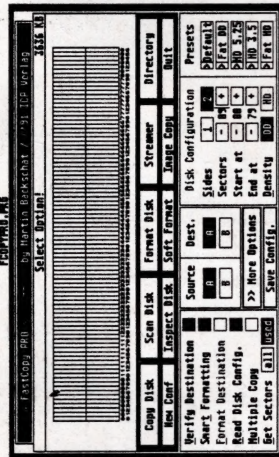
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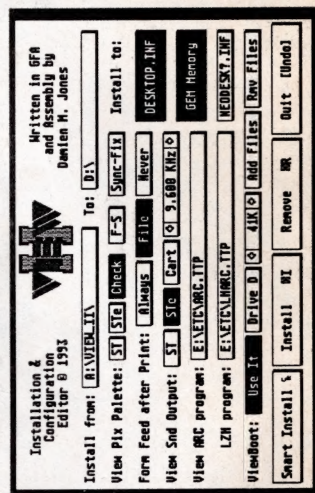
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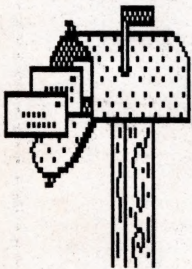
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